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★ Editorial ★

Dr. Allvar Gullstrand

HISTORY RECORDS THAT, as far back as the year 600 B. C., there were ophthalmologists in Egypt (where there is still a great field for such work today), who were clever enough to perform successful operations for cataract; but the fact remains that the real progress in this important specialty in medicine has taken place during the past century.

Prominent among the men who have been responsible for this progress was Dr. Allvar Gullstrand, who was born in Landskrona, Sweden, in 1862; obtained his scientific and medical training at the Universities of Upsala, Vienna, and Stockholm; and was professor of ophthalmology from 1894 to 1913, and then professor of physiologic and physical optics at Upsala University.

Dr. Gullstrand was not merely a successful clinical ophthalmologist, but was also one of the profoundest and intellectually most richly endowed students who have adorned this specialty. He approached the human eye with the mental equipment of a physiologist, a physicist, and a mathematician, and demonstrated beyond question that the ideas then current regarding the formation of images in the eye were entirely wrong, because they were based upon the erroneous assumption that the refracting media behaved like a set of lenses in an optical instrument.

His mathematical investigations of diop-

trics, or the science of the refraction of light through the heterogeneous transparent media of the living eye, are reported in his book, "General Theory of Monochromatic Aberrations," published at Upsala in 1900, and his essays upon astigmatism (1891), dioptrics of the crystalline lens (1908), and the real optic image (1906). For this work he was awarded the Nobel Prize in Medicine for 1911.

In 1889, he introduced a practical method of estimating corneal astigmatism by a single observation with the Sutcliffe ophthalmometer. In 1892 he devised a photographic method for locating a paralyzed ocular muscle. In 1911 he produced the *slit lamp*, familiar to all ophthalmologists, which first permitted the direct examination of an optical section of the living eye and, combined with the corneal microscope of Czapski, initiated the practice of biomicroscopy. In 1912, he devised the reflexless stationary ophthalmoscope, which is free from all reflections and gives a better image, a better stereoscopic effect, and a wider field of vision. He also invented corrective glasses with aspherical lenses, for patients who have been operated upon for cataract, which give clearer images and a wider field of vision than do spherical lenses with the same focal distance.

While this great Swedish ophthalmologist, who passed from the scene of his important

labors in 1930, is, no doubt, well known to most of the practitioners of his specialty, it is desirable that all physicians should be better acquainted with the epoch-making contributions which he made to medical science and to the amelioration of the sad state of those unfortunates who are in danger of losing the precious boon of clear vision.

Every man owes some of his time to the advancement of his profession.—THEODORE ROOSEVELT.

Success

TO MOST PEOPLE, the word, "success," suggests the idea of "sitting on top of the world"; but this desirable condition is a result, not an accident, and the very structure of the word suggests the cause which brings about such an effect.

In Latin, the word *sub* means under, and the word *cedere* means "to go along; to proceed," so the combination means "to go along under," as workmen do when they sink caissons and dig ditches and excavations for the construction of foundations. This, of course, is hard work and wholly unspectacular, but the building—or the life—that has no substantial foundation under it, is ill equipped to withstand the storms of the elements or the buffeting of circumstance.

After the concrete has been poured and has set, a noble structure can be built upon it, and people will say, "What a fortunate builder! See what a success he has made!" But they would be wholly uninterested in the grubby, sweaty, "sordid" labor of foundation building.

The "Seats of the mighty" require as sturdy foundations as a cathedral or a skyscraper, and that means "going along under"—digging and pouring the concrete of the mind and spirit. The lofty and beautiful structure of character and accomplishment which rises upon this foundation is a by-product of the pick-and-shovel work.

The people who are failures have never grown up, spiritually; but they would be shocked if we called them mental defectives, which they are not, in all, or even most cases. They are simply emotionally and socially childish, which means undisciplined and irresponsible.

For success, one must learn to discriminate between the important and unimportant, and give one's time and energy to the former. To overestimate the importance of the trivial is superstition.

One must learn to "live and let live"; in one's own life, to "fill each unforgiving minute with sixty seconds' worth of distance run"; and to let the other fellow fill his minutes with running his kind of distance, not ours. People call this faculty "Tolerance"—and it does not mean a Pollyanna attitude toward life, nor the supine acceptance of intolerable or disastrous conditions, nor taking in the thief or the murderer as a bedfellow; merely that we should understand the conditions and deal with them calmly, intelligently, impersonally, and without rancor or malice.

Dig deep, if you would build high and strong; and remember that the cupolas and porticoes and bay windows on one's house of life, which the unthinking call "success," are merely a by-product of that "going along under," which is the real thing.

There is no royal road to anything. One thing at a time, and all things in succession. That which grows slowly endures.—J. G. HOLLAND.

Old Age

WHEN IS A MAN OLD?

Elbert Hubbard, "The Sage of East Aurora," once remarked, "The good die young—no matter how long they live."

Upon mature consideration we feel that the word, "good," in this aphorism, might be replaced by "active," "progressive," "enthusiastic," or any other word which would indicate that a man is keeping up a vital interest in life, changing as times change and growing all the while.

When should a physician—or any other man—retire?

As soon as he loses interest in and enthusiasm for his work or feels that he knows all there is to know about it.

We all know that the number of years a man has lived is no adequate index of his age. There are some who are antediluvian mummies at thirty, and others who are vital factors in the life of their communities at ninety. So long as a man is doing something worth while and means something to the world he is young.

Look at the men in our own profession. Few who are eminent in any line are under fifty. A physician at sixty-five should be in the flower of his usefulness.

Dr. Abraham Jacobi carried on an active practice at the age of 84. Sir Clifford Allbutt, who died in England some years ago, at the age of 89, was still keenly interested

in all that was going on and finished the writing of a textbook shortly before his death. Dr. S. Wier Mitchell, who was one of our most noted neuro-psychiatrists became famous as a novelist after he was 80 years old.

No, it isn't years that age us; it is the way we meet life—our attitude of mind.

If you have lost interest in medical society meetings; if you "cannot find time" to read one or two medical journals (at least); if the last book in your library is ten years old, or the later ones haven't been studied; if, "what you learned in medical college is good enough for you"; if "all these new-fangled notions are damned foolishness," you are growing old, as a doctor.

What if the new-fangled notions are sometimes (or even, often) wrong? Get enthusiastic about them, anyway, or, at least, know enough about them to curse them with intelligence as well as fluency.

What if the medical journals, and even textbooks do contain a lot of "bunk"? You will never be able to know just how worthless they are until you read them carefully; and if you do that you cannot fail to become enkindled with enthusiasm at the idea of the tremendous advances that are being made along all scientific lines. There may be a good deal of chaff, but the farmer has to thresh his wheat, and the results are worth the effort.

Do you find it a bore to take your wife to a dance or your children to a movie or to take the whole family out into the woods for a picnic? Are you disturbed and peevish when dinner is not ready on the minute, or the children make healthy, cheerful noises about the house? If so, you are growing old as a *human being*.

Robert Louis, "The Beloved," wrote, years ago,

"The world is so full of a number of things,
That I think we should all be as happy as kings."

That's the secret! You do not have to travel a long distance to the land of "heart's desire." Look about you. The *whole world* is full of interesting, exciting, delightful, lovable things. Seize them!

If you find, on mature deliberation—be perfectly frank with yourself—that you are slipping into senescence (no matter what your years may be), the remedy is *more life*. More interest in the people about you and in your work; more knowledge of the progress which is being made in all lines,

all over the world; more sympathy and understanding.

Don't let life bury you until you are dead. Keep *living* and learning and loving and you will stay young.

No sound man has a right to retire at any age, unless he wishes to die.—ROBERT GEORGE.

Stetson Hats and Things

NOT SO LONG AGO a drug salesman called upon a prosperous physician, who looked and dressed the part, and who in the course of the interviews remarked, "Why do you charge such high prices for the drugs you sell? I can buy the same things for less."

The salesman glanced about and asked politely, "Pardon me, Doctor, but what kind of a hat do you wear?"

"A Stetson; but what has that to do with it?"

"I wear a Blank and Blank hat, which costs me two dollars. Why do you pay ten dollars for a Stetson?"

"Because I believe it to be the best hat I can buy and am willing to pay the difference to get a satisfactory article."

"You feel sure, then, that, though both of our hats cover our heads and look much the same, at a distance, there really is a difference?"

"Absolutely."

"I sell 'Stetson' drugs, Doctor. Are the other kind good enough for your patients?"

There's something to think about! We get what we pay for, and *no more*. If we want to do a "Blank and Blank" type of business, inferior equipment and drugs may be good enough for *us*. But *are* they good enough for the people who put their lives in our hands? What would they say about it if they knew the facts? What is to prevent the truth from leaking out, some day? Then, just where will we stand?

The answering of these questions will be a profitable occupation for the next unoccupied half-hour; and upon the way we answer them will depend, to a large extent, where we will stand, professionally and financially, when we take stock of ourselves at the end of the year.

It is *results* our patients want; and we can't do good work with inferior tools, in medicine or any other line of activity.

Of course there are "gougers" who charge

unwarrantably high prices for what they have to sell, but it will not take long to discover their methods, and should take even less time to scratch them off our lists.

It might be a truly profitable plan to start from now with a resolve to cease trying

to cultivate a modern medical practice, as our progenitors cultivated their fields, with a crooked stick, and to pay enough for our instruments, apparatus, and drugs to buy articles which can be depended upon to do the work.

The man who does a "Stetson" type of practice will get the "Stetson" type of people for patients and can well afford to let the "Blank and Blank" folks go to a doctor of their own kind.

That doesn't mean "high-hatting" or overcharging anybody. It merely means: do good work, with good tools, *all the time*, and you will get good fees and plenty of them.

Syphilis Stamps

THE BRIGHT LITTLE CHRISTMAS STAMPS devised by the Danish postal clerk, Einar Holboell, in 1903, which are used to raise money to carry on the fight against tuber-

culosis, are now so familiar that they seem a regular part of the holiday season.

Now comes another Scandinavian, Einar Lyngklip, an accountant with the Edison System, affixing stamps like the one pictured on this page to his Christmas mail, with the object of popularizing the campaign against syphilis.

If the American Social Hygiene Association should take up this idea as actively and successfully as the American Tuberculosis Association sponsored the stamps with the little red double cross,

the funds for a real campaign against syphilis ought to be forthcoming quite promptly.

NEXT MONTH

Dr. A. H. Maloney, of Washington, D. C., will present the advantages, disadvantages, and technic of the use of the short-acting barbiturates as intravenous anesthetics.

Dr. Lindon Seed, of Chicago, will discuss, in his clear-cut style, the estimation of operability in exophthalmic goiter.

Drs. P. L. Davis, F. R. Greenbaum, and E. L. Maxwell, of Philadelphia, will make a preliminary report on the effects of theophylline isopropanolamine in 25 patients with hypertension.

COMING SOON

"The Treatment of Alcoholic Emergencies," by Andrew J. McGee, M. D., Dwight, Ill.

"Psychobiology and Mental Health," by Frederick L. Patry, M. D., Albany, N. Y.



★ *Leading Articles* ★

Spinal Anesthesia*

By R. S. HUBBS, M. D., Sheridan, Wyoming

ATTEMPTS TO REDUCE or entirely eliminate the pain produced by surgical procedures probably originated as long ago as surgical treatment itself. From the crude methods of ancient medicine, such as the use of drugs, fermented drinks, and cerebral concussion in attempts to lessen pain, medical science has progressed through the important demonstration of the anesthetic properties of ether by Farady, in 1818, and its first successful use by Long, in 1841, and by Warren, in 1846, to the employment of hypnotic gases, powerful analgesic drugs, and nerve blocking reagents which are at the command of the physician and surgeon of today.

With the improvement in efficiency which has come with the gradual development of anesthesia, safety of the patient has not as yet been fully attained. When the improvement of present methods over ancient ones is considered, it must be realized that even present procedures do not prevent an occasional death, directly or indirectly attributable to the anesthetic, and intelligent efforts may well be directed toward lowering and eliminating such losses. Desire to eliminate the morbidity and mortality due to anesthetics, as well as differences in the facility of their administration, have caused the medical profession to hail with relief and pleasure the introduction of various new methods of anesthesia, but in the use of each new method have been found dangers possibly previously unsuspected.

One may summarize present knowledge of the subject by saying that we have several very efficient methods of eliminating surgical pain, each of which has its own particular advantages and disadvantages, but in the use of each of which there is some definite danger. This danger may be reduced, but not entirely eliminated, by careful administration of the anesthetic, regardless of its type, and therein lies the reason for the necessity of utmost care in such administration and for the fact that anesthesia has practically become a science of itself.

In this paper an attempt is being made

to discuss the advantages and disadvantages of but one type of anesthesia, spinal block. This type is not selected because of an opinion that spinal anesthesia is superior to all other kinds, but because it is felt that present medical opinion in some places is decidedly against the use of such anesthesia because of a mortality which might possibly have been lessened by different methods of administration, and because it is felt that, in a fairly large number of selected cases, spinal anesthesia is the method of choice from the standpoint of effectiveness and facility of administration.

Dangers

A review of current and past literature reveals many strong arguments for the use of spinal anesthesia and some apparently as strong arguments against it. As long as thirty years ago, Spielmeier¹ reported degeneration of nerve roots in the peripheral portion of the spinal cord in dogs and apes following Stovocaine injections. More lately, David, Haven, Givens, and Emmet² showed that spinal anesthetics in common use (Nupercaine, Spinocaine, Gravocaine, and Scurocaine) are both hemolytic and myelolytic, and that such anesthesia may be followed by aseptic meningial reactions, with subsequent meningeal thickening. Also, Brock, Bell, and Davison³ have reported 7 personally observed instances of "nervous complications following spinal anesthesia," with tissue changes in one case. On the other hand, Foss and Schwalm⁴, in a report of 2,000 cases each of ether and spinal anesthesia, have stated: "The ultimate death rate in the hospital is practically the same following the two anesthetics"; but furthermore expressed as their conviction in regard to the use of spinal anesthesia, that "At least with acute abdominal emergencies, the far greater ease and celerity with which the operation can be performed clearly exerts a positive influence in reducing the operation mortality."

From study of literature on the subject of spinal anesthesia one can only derive the conclusion that such anesthesia may produce some organic or functional harm to the patient, which occasionally is found to be more or less permanent. This fact should not be given such undue weight as to make

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one discard it altogether in favor of other forms, for the very good reason that anesthesia of any kind is, of course, an unnatural state and there are occasionally serious and even fatal results from the general type, as well as from other forms. Even in those instances in which no gross changes are discoverable, there may be damage to the organism. The toxic effect of general anesthetics has long been recognized and little recent literature was found on the subject, but references to the harmful effect of ether have been made by Minnitt¹, while Bartlett and Simmonds², in a study of 148 deaths following gynecologic operations, found that 18 occurred in the operating room as a result of ether.

A review of hospital records at this Facility shows that, since January 1, 1932, there have been 4 deaths following operations, and 2 serious postoperative complications which did not result in death. In addition there were several instances in which bronchitis of short duration was present; also less severe complications in some cases. The same study shows that, in addition to more minor operations in the same period, there have been 133 operations under general or spinal anesthesia. These were divided as follows: 37 under ether; 85 under spinal anesthesia; and 11 under combined ether and spinal. Of the total of 96 instances in which spinal anesthetic was used, Novocaine was administered exclusively, usually in the crystal form, which was dissolved in spinal fluid prior to injection. In those instances in which the combined method was used, the spinal was used at first, found to have produced an incomplete anesthesia, and ether was used to supplement the action of the spinal anesthetic.

Of the 4 deaths in this series, two followed operations in which ether had been used, and two followed those performed under spinal anesthesia alone. In one of the former two, death occurred in the operating room. In this instance a psychotic patient, who had suddenly shown signs of shock without external evidence of trauma, was found at operation to have a ruptured bladder and general peritonitis. In the other instance in which death followed an operation under ether anesthesia a patient had been brought into the hospital with an "acute abdomen" and at the operation, which was begun 2½ hours after admission, a perforated appendix and general peritonitis were found. The patient regained consciousness after the operation in the usual length of time, but was then restless and presented a thready, rapid pulse. In spite of much supportive treatment, he died 36 hours after operation.

In the first of the two instances in which death followed an operation performed under spinal anesthesia, it occurred on the

third postoperative day, and at autopsy acute hemorrhagic nephritis was found to be the cause of death. In the other instance death occurred on the operating table, and at autopsy a hemorrhagic pulmonary infarct was found. This patient had been admitted with an "acute abdomen," and at operation a loop of intestine had been found occluded in an adhesion. The combination of these conditions possibly produced the thrombus which became loosened and caused the death of the patient. He complained of pain in his left chest and down his left arm several times prior to his loss of consciousness, no other symptoms appearing for the first forty minutes following administration of the anesthetic.

Of the two serious complications, both followed operations in which ether had been used as an anesthetic. One was postoperative pneumonia, the other thrombosis of the great saphenous vein, on one side. Recovery occurred in each case. In no other instance, with any anesthetic, have other complications occurred, with the exception of comparatively minor ones, such as transient nausea, vomiting, and headaches. A chart showing the type of operation and the anesthetic used is shown in Table I.

TABLE I

OPERATION	ANESTHETIC		
	Ether	Spinal and Ether	Spinal
Appendectomy	24	7	41
Hernial repair	4	2	20
Pyloroplasty for perforated peptic ulcer	1	0	0
Rectal and external genital operations	4	0	21
Cholecystectomy	2	0	0
Repair of ruptured bladder	1	0	0
Removal of testis	1	0	1
Operation of acute intestinal obstruction	0	0	2
Removal of abdominal cyst	0	1	0
Exploratory laparotomy	0	1	0
Total	37	11	85

The patient on whom it is felt that spinal anesthesia is distinctly the method of choice is one who is mentally stable, whose age is not as a rule past sixty, and in whom no discoverable cardio-vascular disease is present. While it may be argued that a patient with cardio-vascular or cardio-renal disease, for example, or even an aged person, may tolerate spinal anesthesia better than general anesthesia, it is felt that such patients may possibly be in less danger if local anesthesia is used, and that spinal anesthesia should not be used with them if local methods will suffice. In addition to the earlier-mentioned type, one may add another type of patient in whom spinal anesthesia is well taken (and this has particular reference to the work in some Veterans Administration facilities), that of mentally deteriorated or apathetic psychotic patients, in whom the prospect of operation produces little or no apprehension.

From the foregoing it may be correctly

inferred that it is believed that no patient who is very apprehensive, psychoneurotic, or frequently presents evidence of mental instability is a good subject for spinal anesthesia. Such individuals worry greatly before being taken to the operating room, are mentally hypertensive on the table, and if, as occasionally happens, the spinal anesthesia is incomplete and general anesthesia is used, take the latter anesthetic very poorly and with probably more danger to themselves than if general anesthesia had originally been used.

Advantages and Disadvantages

The advantages of spinal anesthesia are: Satisfaction of some patients in knowledge that they do not have to lose consciousness during operation; absence of the respiratory difficulty, temporarily increased arterial pressure, restlessness, and excitement of the pre-anesthetic stage; greater muscular relaxation; the lessened danger of respiratory symptoms such as cough, bronchitis, and even pneumonia, which occasionally follow the use of a general anesthetic; and ability of the surgeon to perform emergency major operations without the assistance of a skilled anesthetist, since he can, by this method, if need be, give the anesthetic himself, and detail a nurse to watch the patient while he proceeds with the operation.

The disadvantages of spinal anesthesia consist chiefly in: Inability of the operator to remove the entire anesthetic if dangerous symptoms should appear; apprehension produced in some patients by knowledge that the operation is being performed during consciousness; and dangers in thoracic and high abdominal surgery.

The first disadvantage may be only partially corrected by keeping sterile spinal needles at hand for removal of some of the spinal fluid by gravity if reactions occur. (In the period of three years that spinal anesthesia has been used at this Facility, such a procedure has not been necessary); the second may be reduced by the use of hypnotics; and the third can be overcome only by careful selection of patients and choice of anesthetic. At this Facility, spinal anesthesia is not used for operations above the diaphragm, nor is such use believed to be advisable.

Technic

Administration of 3 grains (0.2 Gm.) of Sodium Amytal (or some other effective hypnotic), one hour prior to the spinal anesthetic, is believed to be definitely advisable; the usual preoperative dose of morphine is given as well. These allay the dread of operation and the accompanying apprehension, and add to the effectiveness of the spinal block.

For the administration of the anesthetic, the patient is placed on his right side, with the spine and thighs flexed as much as is consistent with his comfort. (For distinctly left-sided operations he is placed on his left side, even though this makes the procedure more difficult for a right-handed anesthetist, since it has been found that the medication is more effective when thus given). Iodine and alcohol are usually used for skin preparation.

In giving a spinal anesthetic to patients who are at all apprehensive, the usual wheal and subsequent deep local anesthesia should be used before introduction of the spinal needle; but experience in this clinic has shown that most patients who are not unduly apprehensive prefer the direct introduction of a sharp needle without a local anesthetic.

The site of puncture is usually between the second and third, or third and fourth lumbar vertebrae, using preferably a short-bevel, three-inch, 20 or 22 gage needle, which is sharp and entirely free from rust. The needle is usually inserted directly in the midline, though an approach lateral to the midline, and a consequent oblique entry, may be used. The point of the needle is kept in contact with the under surface of the periosteum of the spinous process of the immediately proximal vertebra, since it has been found that such an entry is not only less painful, but the needle thus directed is more likely to pass between the bodies of the respective vertebrae and into the dura on the first attempt than by other methods. Puncture of the dura is accompanied by a snap and a lowered resistance to insertion, which readily inform the skilled operator that the point of the needle is in the sub-arachnoid space.

Best results in this clinic have been obtained by using from 100 to 200 milligrams of Novocain crystals. These are dissolved in from 1 to 4 cubic centimeters of spinal fluid, which is permitted to drop into the original glass ampule containing the crystals, which has been sterilized externally by use of phenol and alcohol prior to use. More fluid is used to dissolve the crystals for higher than for low operations.

After dissolving the crystals in the ampule, the solution is withdrawn into a 5 cc. syringe, and the tip of the latter is applied to the spinal needle, after removing the stylette, which is always reinserted in the needle to prevent leakage of spinal fluid during the time taken for completely dissolving the crystals and drawing the solution into the syringe.

After connecting the needle and the syringe now containing Novocain in spinal fluid, a small amount of spinal fluid is again withdrawn, to be certain that the tip of the

needle is still in the subarachnoid space. Approximately half of the anesthetic solution is then injected slowly and with but slight pressure upon the syringe plunger, and a small amount of fluid again withdrawn as before. This *barbotage* is repeated several times, to mix the spinal fluid and anesthetic solution thoroughly; the remainder of the solution is injected; and the needle then withdrawn. Higher anesthesia is produced by a greater amount of barbotage and use of more Novocain. Two hundred (200) milligrams is believed to be sufficient for any abdominal operation, while 100 to 150 milligrams are sufficient for pelvic, rectal, and external genital operations.

The procedure above outlined places in the subarachnoid space a solution slightly heavier than spinal fluid, and subsequent treatment of the patient is conducted on that basis. If higher anesthesia is desired the chest is lowered, and if it is desired to prevent higher anesthesia than is present at any time, the chest is elevated above the level of the abdomen and pelvis.

Because of the small danger of the anesthesia proceeding upward as far as the fourth ventricle, with probably disastrous results, the head should be kept well up on a pillow until the end of the approximate fifteen-minute period in which the anesthetic becomes fixed to nerve tissue and hence is no longer able to travel upward.

From 7 to 15 minims (0.5 to 1.0 cc.) of a 1:1,000 solution of Adrenalin (epinephrin), or from 15 to 30 minims (1.0 to 2.0 cc.) of five-percent solution of ephedrine hydrochloride is given subcutaneously when the anesthetic is administered, to tend to prevent lowered blood pressure. If the anesthetic is given properly, it should be in full effect in fifteen minutes and the anesthetist then need have no further worries regarding pain produced by the operation.

Factors which tend to reduce or vitiate the effectiveness of spinal anesthesia are: Improper punctures, permitting the anes-

thetic solution to escape outside the dura; the use of long-bevel needles, only the very tip of which may pierce the dura, thus permitting withdrawal of spinal fluid and yet allowing part or all of the anesthetic to escape outside the dura; a third factor which may be operative in this respect is individual resistance of the patient to the action of the drug.

On the rather infrequent occasions in which the anesthetic does not produce full effect, it is usually best to use a general anesthetic, preferably nitrous oxide or ethylene gas, which takes effect quickly and does not cause the surgeon the inconvenience of waiting for the longer period of time required by ether induction, and also relieves the patient of the greater apprehension of that longer period. Arrangements for this procedure have now been made at this clinic.

In summary, it is believed that spinal anesthesia, though having some disadvantages, as do all other anesthetics, is decidedly the method of choice in selected cases and operations, producing greater relaxation, fewer respiratory complications, and greater satisfaction to both patient and surgeon, if properly used in such selected cases and operations.

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Veterans Administration Facility.

SCIENCE AND DEMOCRACY

Science is the main support to democracy. Popular government cannot succeed without the support of science.—DR. WILLIAM E. RITTER, in Science News Letter, July 3, 1937.

THE GOLDEN RULE

The social instincts—the prime principles of man's moral constitution—with the aid of active intellectual powers and the effects of habit, naturally lead to the Golden Rule: "As ye would that men should do to you, do ye to them likewise," and this lies at the foundation of morality.—CHARLES DARWIN, in "The Descent of Man."

Electrical Charges of Pollen

By JOSEPH B. BIEDERMAN, M. D., Cincinnati, Ohio

IT IS GENERALLY accepted that small particles floating in the air have electrical charges, but no one, thus far, has attempted to determine whether or not pollens

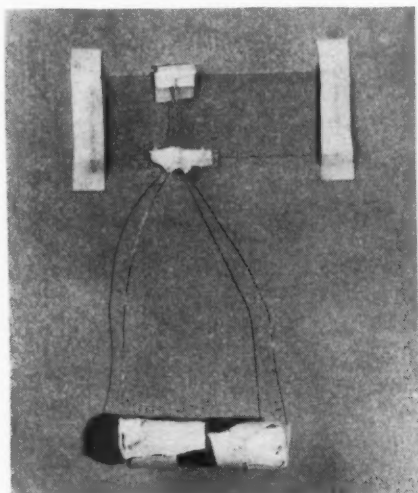


Fig. 1

are capable of receiving and carrying electrical charges.

The object of the experiments reported in this paper was to ascertain whether pollens can and do carry electrical charges.

Figure 1 is a photograph of a one and one-half ($1\frac{1}{2}$) volt battery having one copper wire attached to its negative pole and one to its positive pole. These two wires are, in turn, attached to a glass microscope slide, parallel to one another and approximately one millimeter apart. Adhesive tape is used to attach the various parts. The two wires on the slide, when about one millimeter apart, are both seen simultaneously when placed under the low-power magnification of the microscope. This setup was then placed against a wall and held there by adhesive tape attached to both lateral ends of the glass slide. The battery and the wires were suspended from the slide.

A mixture of the pollen of both giant and dwarf ragweeds was then placed on a piece of paper and the pollen blown gently against the surface of the wires by air from a Number 1 DeVilbiss rubber bulb. The pollen grains, when coming toward the electrical

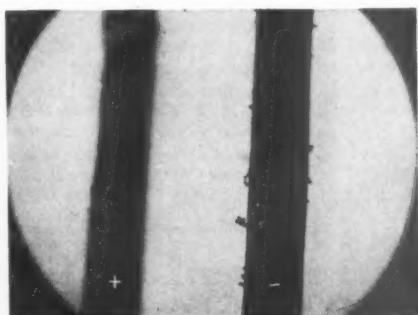


Fig. 2

field induced by the two wires, were seen by the naked eye to be deflected to both sides of the wires on the slide.

Under the low power magnification of the microscope, some pollen grains were found to be held by the negatively charged wire; none were on the positively charged wire;

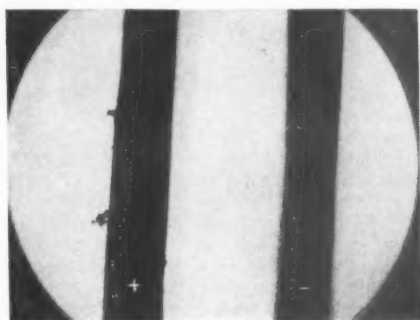


Fig. 3

and none were in the electrical field between the two wires (see Fig. 2).

The following experiment was performed in order to determine whether the pollen could be given an opposite charge, and thus be forced to cling to the opposite wire.

Some giant and dwarf ragweed pollen grains were placed on a piece of paper and were given a negative charge by being brought in contact with a comb which was rubbed on woolen trousers, and these pollens were then dropped on another piece of paper. When the comb came near the pollen (before there was any actual mechanical contact), the latter was seen to leave the paper and become attached to the comb.

This demonstrates the ease with which an electrical charge can be induced in pollen.

The pollen was then blown against the surface of the two copper wires on the slide, in the apparatus described. This time the identical results were obtained as in the first experiment, except that the pollen grains became attached to the oppositely charged (positive) wire, as shown in Fig. 3.

Repeating the above experiments, but using pollens with mixed charges; that is, some of the grains having positive and others negative charges, it was found (as was to be expected) that the positively charged pollen particles became attached to the negatively charged wire, while the nega-

tively charged pollens clung to the positively charged wire.

These experiments prove that pollens can have either positive or negative electrical charges, and that even a small (1½ volt) battery is capable of supplying enough potential to repel similarly charged pollen particles and to attract oppositely charged pollens.

This bit of knowledge has, at present, a direct clinical application, in an electric filter mask, used in the prevention of inhalant allergies, such as hay fever, rose fever, and inhalant asthma.

Union Central Bldg.

Intraspinal (Subarachnoid) Injection of Vitamins B₁ and C in Acute Poliomyelitis*

By ELIAS LINCOLN STERN, M.D., New York City

RECENT REPORTS of cases of acute poliomyelitis occurring in Chicago, Kansas City, Buffalo, Ontario, and elsewhere prompt me to suggest a form of therapy and prophylaxis which appears logical to me, and of value.

Wedgewood, in 1925, concluded that infection, either directly or indirectly, exhausted the reserves of vitamin B₁ in experimental animals, and developed a need for greater supplies. The degeneration produced by the poliomyelitis virus is very similar to that produced by lack of vitamin B₁. Mathews¹ suggests that "the virus injures or kills the cell of the motor horn by consuming its stored or available vitamin B₁, and thus produces the degeneration, which is an indirect result of this deficiency."

Since it is well established that vitamin B₁ is essential for the normal metabolism of nerve tissue², it may be that those individuals on the verge of vitamin deficiency, owing to an inadequate diet, are more susceptible to the infection, and that once the virus enters the nerve cell, it more quickly produces the avitaminosis and may kill the cell before the cell can, in its weakened condition, kill it.

According to Mathews, a few cases have been reported, and one came under his attention, in which prescribing large amounts of vitamin B₁ early in poliomyelitis was followed by unusual recoveries. He there-

fore suggests the giving of vitamin B₁ in large amounts, by mouth, subcutaneous injection, and by rectum.

The intraspinal (subarachnoid) injection of synthetic vitamin B₁ in a rapidly ascending case of poliomyelitis apparently prevented respiratory paralysis, and saved the life of a four-year-old child.

Case Report

L. B., male four years old, a patient of Dr. George R. Dempsey, Cornwall-on-Hudson, N. Y., was admitted to the Cornwall Hospital on August 8, 1937, with the complaint of weakness in the legs, pain in the hips, nausea, and vomiting for one day. He was unable to stand, and fell on attempting to go out to play. Two days before this, the child fell and struck his head, and had a headache which shortly passed off.

On August 9, a spinal tap revealed cloudy fluid; cell count, 654 (75 percent polymorphonuclear leukocytes, and 25 percent lymphocytes); globulin, negative; sugar-reducing substance, a very faint trace. The child had no fever. On August 10 his cell count was 377, and there were very faint traces of globulin and sugar-reducing substance.

When first seen by me on August 10, the paralysis had affected all four extremities. The boy was dull and apathetic. His neck was rigid, and there was internal convergence of the right eye. The chest moved very little with respiration, breathing being mostly diaphragmatic.

On August 11, he received his first intraspinal (subarachnoid) injection of 5,000 international units (I. U.) of synthetic vitamin B₁ (10 mg.), especially prepared and steril-

*From the Department of Sympathetic Neural Surgery, Sydenham Hospital, and the Department of Anatomy, Columbia University, N. Y. City.

ized for intraspinal use.[†] Within twenty-four hours, the ocular signs and rigidity of the neck disappeared. The boy became generally brighter and began to take more nourishment. He received 9 similar injections of 5,000 I. U. every third day. His mentality became normal, he ate well, and he began to have some motion in his fingers, forearms, and toes.

Improvement in this case appears to be due to the vitamin B₁ therapy, although such rapidly ascending cases may, on rare occasion, stop short of complete respiratory paralysis. Had vitamin B₁ been given upon the earliest signs of illness, the paralysis may have been confined to the lower limbs.

The patient was transferred to the New York State Reconstruction Home at West Haverstraw, N. Y., on September 12, 1937, and soon after admission was placed on a Bradford frame with a bilateral airplane splint, and plaster boots were applied. When tenderness subsided, physical therapy treatment was instituted, and has been continued to date.

On admission to the Home, examination showed generalized poliomyelitic involvement. The findings of the muscle and nerve degeneration were characteristic of this disease.

A follow-up note, dated January 7, 1938, states: "At the present time the patient has recovered normal power in his back and neck. He has about 25 percent power in the abdomen and both lower extremities, and better than 25 percent power in both upper extremities. He is showing evidence of improvement, especially in his arms."

That synthetic vitamin B₁ may safely be injected repeatedly into the spinal subarachnoid space, and thoroughly barbitaged with the spinal fluid, without causing respiratory paralysis or symptoms of meningitis, is emphasized in a detailed report³. Synthetic vitamin B₁, when injected intraspinaly, actually stimulates respiration.

Vitamin B₁ is of maximum value when given intraspinaly because, even if taken by mouth in excessive doses, the vitamin may be neutralized or digested by the alkaline proteolytic ferments of the small intestine. Even if it is absorbed by the intestinal tract, or from parenteral injections, it may be neutralized by an alkaline cerebrospinal fluid and nerve tissue, since hydrogen ion concentrations of 8.5 or over in the cerebrospinal fluid are not uncommon. A pH of 8.5 will neutralize vitamin B₁. Repeated

injections of this vitamin, intraspinaly, tend to decrease the hydrogen ion concentration of the cerebrospinal fluid. Vitamin B₁, injected intraspinaly, may stay in the cerebrospinal fluid for several days, while if absorbed or injected into the blood stream, it may be eliminated quite rapidly in the urine.

Of the other vitamins, A, C, and D, which I have injected intraspinaly for other conditions involving the central nervous system, vitamin C may prove to be of value in poliomyelitis. Experimentally, Jungeblut⁴ has shown that parenteral injections of vitamin C mitigate the severity of poliomyelitis in monkeys. Since vitamin C has been shown to kill the poliomyelitis virus in vitro, and since it, like vitamin B₁, plays a part in the oxidation in the cell, it would seem logical to combine both vitamins for intraspinal use in poliomyelitis. This combination has been given repeatedly by me for other conditions, without harmful effects.

In times of epidemics, and in individual cases of direct exposure to poliomyelitis or other virus diseases, the oral and parenteral administration of both vitamin B₁ and C, in large and repeated doses, appears to offer hope for prophylactic protection. Immediately upon the development of the earliest signs of the disease, synthetic vitamin B₁ and C should be given intraspinaly, into the subarachnoid space, via an ordinary lumbar tap. For children up to 10 years of age, 2,000 I. U. (100 mg.) of vitamin C and 5,000 I. U. (10 mg.) of vitamin B₁ may be given every third day. For patients over 10 years of age, the dose may safely be doubled. Cell counts should be made and hydrogen ion concentrations determined at the time of each puncture, and injections should be stopped if the pH is reduced to 6.8 or less.

Further observations and evaluation of this suggested form of treatment should be made. Those coming in contact with this devastating disease should keep this treatment in mind.

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[†]These special vitamins were kindly furnished by Endo Products, Inc., New York City.

The Autonomic Nervous System in Asthma

By A. J. D. CAMERON, M.B., Ch.B., and J. H. THOMPSON, B.Sc.,

Tunbridge Wells, Eng.

IT IS WITH considerable temerity that we again enter the controversial field of asthma, since it is one in which there is so much divergence of opinion. Nevertheless we hope that the points we draw attention to may be enquired into by other observers.

We are agreed that the basic causes of asthma may be tabulated as follows:

- 1.—Basic toxicosis.
- 2.—Reflex action, initiated primarily in the nasal area.
- 3.—Autonomic imbalance.

The first two have been adequately dealt with in previous publications by different members of our organization, so that in this paper we confine ourselves to autonomic imbalance.

We might advisedly accept, in general, the work of Scerger, Haseltine, Phillips, and others, who have amply demonstrated the anatomic reflex paths of the nose area and the bronchial tree. It has been commonly accepted that the asthma syndrome is based on a vagotonic condition; that is, one in which the vagus nerve is the preponderating influence.

Here it may be mentioned that one of us (Thompson) drew attention to the necessity of differentiating between tonal and threshold values in the autonomic system. Previous to Thompson's publication we could find no literature clearly defining such a distinction, yet it is of the utmost importance that such a distinction be made and, at the same time (as we have pointed out in the "Autonomic Control of Colon"), the ability to distinguish compensatory threshold value on one side of the autonomic system in correcting a fault on the other.

We now venture to extend the suggested imbalance as a means of grouping asthma cases from two points of view. One of us (Cameron) hitherto had held the opinion that all asthma cases necessarily indicated a vagotonia, or disturbed vagal threshold, but with improved methods of investigation we are both agreed we might divide asthma into two groups: (1) vagotonic; and (2) sympathicotonic. The work of Haag, reported from Germany, enables us to corroborate many of the suggestions contained therein, and we feel we can formulate a table such as the following:

ASTHMA

<i>Vagotonic.</i>	<i>Sympathicotonic.</i>
Tetanoid	Basedoid
Non-sensitised	Sensitised
or	or
Non-allergic	Allergic.

We purposely use the terms tetanoid and Basedoid because we feel that credit must be given to the German investigators, and because we only elaborate what they have already indicated.

One of us had already drawn attention to the fact that the blood and urine reports of Bray differed very little from many of those of our group, yet Bray was writing largely from the allergic point of view. The majority of us in the Haseltine group have never been happy about so-called allergic asthma. Rather have we accepted the statement of La Forge, "All allergic cases are toxic, but not all toxic cases are allergic." It is that truism which we wish here to urge, and we hope that we can indicate sufficiently a basis from which to investigate in further elucidation of the asthma problem.

Our group as a whole was satisfied that all asthma cases were toxic and, if we asserted that all were vagotonic, we now freely admit that this belief must be amended and we must recognize for classification a sympathicotonic division. On the other hand, the toxic basis and nose area implication are substantiated, for underlying the sympathetic group is a liver inefficiency, and in all this sub-group of asthma cases implication of the nose or sinuses or both was found.

It would appear, therefore, that the type of autonomic imbalance might vary, but that the two other factors, basic toxicosis, and nose implication, remained true. Furthermore, from investigation of cases other than asthma, we find that all our plus sympathetic cases show "tendencies" to sensitisation of one kind or another, while our vagotonics fail to give us evidence of sensitisation, at least by the means of so proving within our present knowledge. If this statement is provable by other investigations (and it would seem from the German reports that this is a possibility), then we have gone at least a certain way towards a

more rational view of and treatment of asthma.

As regards the terms used by us, such as "basic toxicosis," we are often criticised by investigators outside the group. May we ask, what term, other than this, better describes the condition we try to indicate? Further, since we admit to the sympathetic group, has it not been clearly indicated, if not accepted, that those sympathetic cases, with their evidence of raised blood iodine ("Thyroid Dysfunction: Its Treatment by Tyronorman and Diet." Cameron. *Medical Press & Circular*, Feb. 27, 1935), have all presented features of a toxic condition plus a liver inefficiency? We feel that this statement is of significance as further evidence of the soundness of our ideas. Furthermore, those toxic cases with liver inefficiency present the asthma syndrome only if there is the third factor—nose implication. If it is possible to obtain corroboration of the ideas presented in this paper, then surely we can claim an advance in attaining a clearer basis on which to treat our cases.

Sympathicotonic Bronchospasm

Here we come, then, to the question: why, if only stimulation of the vagus provokes bronchial constriction, should the opposite type of case (sympathetic) present bronchospasm? It may be argued that the bronchospasm in such cases is due to a localised irritability of the parasympathetic nervous system, masked by a generalised sympathicotonia.

It is claimed by some that the parasympathetic nervous system, in contradistinction to the sympathetic nervous system, exhibits local variations in tonal and threshold values. While we are not prepared to accept different local tonal values, we agree that various threshold values of either part of the autonomic nervous system probably coexist. Thus it is quite possible that a hypertonia of the sympathetic nervous system may mask a low threshold value of the parasympathetic innervation of the bronchiolar musculature. But there are a number of subjects in which this cannot be the explanation: they are asthmatic patients exhibiting hyper-activity of the sympathetic side of the autonomic nervous system and who improve markedly when treated with parasympathetic stimulants. That sympathicotonic conditions are compatible with asthma is not a new conception. Maranon considered that the asthmatic syndrome, in certain patients, was associated with a hyper-suprarenal factor.

In the light of our physiologic findings, it was necessary to amend our views on vagotonia in asthma. Consequently it was imperative to search, in the anatomic-physiologic field, for evidence that it was possible to obtain bronchial constriction through

sympathetic stimulation. This evidence was available through and in the work of Levine, published in the *Annals of Surgery*, Vol. 102, August, 1935.

When we put, for comparison with Levine's published facts, the reports on work done in vagotonic asthma by Sercer, of Zagreb; Brodie and Dixon, of Cambridge; and Phillips, of Miami, we can safely assert that bronchial constriction, as evidenced in asthma, may be brought about by sympathetic or vagal stimuli or both; in other words, what was described by Adams, Haseltine, Cameron, and others, as one of the three essentials of the asthma syndrome—autonomic imbalance. The field indicated originally by them is certainly widened, but that is, and probably will be, true of all modern ideas on any subject, as further knowledge is gained.

The main point of this paper is to suggest that the academic clinical and therapeutic division of asthma cases serves mainly as a guide to adequate treatment. It is possible to accept the theoretical suggestion that mixed types crop up, but from the treatment point of view that may not be of much consequence, if laboratory reports are correlated with physiologic findings. We feel, however, that the present report may and does give a better explanation as to the causes underlying sensitised and non-sensitised cases, and in our experience this idea has enabled us to obtain better results in our total number of cases.

We will give, for clarity's sake, in a future paper, a comparison of laboratory and physiologic reports from the two types of cases, but we would stress the fact that in no case where sympathetic bias was noted did we fail to find the other factors which were given as basic causes of asthma. ("The Asthma Symposium," *The Medical Press and Circular*, May 15, 1935. Vol. XCX No. 5010). Work is being done which we hope will lead to further clarification of the pure and mixed types to which we refer.

Anatomic Pathways

In his quoted article, Levine describes what was "believed" to be the nerve supply of the bronchi as coming, on each side, from the pulmonary plexus, the latter consisting of two branches, anterior and posterior, respectively adjacent to the anterior and posterior aspects of the hilum of the lung. Both the vagus and the sympathetic contribute branches to the plexus. Both nerves have central connections with the respiratory center in the medulla. The sympathetic branches reach the plexus through the connector cells which lie in the third and fourth thoracic segments of the cord; from these, connector fibers pass, in animals, to the stellate ganglion; in man they appear to end in all three ganglia of the cervical sym-

pathetic. From these the excitator fibers pass to the pulmonary plexus in the cardiac branches of the sympathetic.

He goes on to say that, in the light of recent investigations, this conception of the bronchial innervation cannot be accepted in its entirety. He pleads for due consideration being given to an important anatomic structure, the sympathetic thoracic chain, with its twelve ganglia and numerous afferent and efferent rami. This structure is situated along the necks of the ribs, the ganglia being placed directly in front of the corresponding rib. In each ganglion seven to nine rami proceed posteriorly to join the under surface intercostal nerve in the space immediately above. Some of the branches are myelinated and some not so. From the second, third, and fourth thoracic ganglia branches proceed medially to join the pulmonary plexus directly. From all the ganglia, especially the upper five, branches proceed to the aorta to assist in the formation of the thoracic aortic plexus, and from there pass again to the pulmonary plexus.

Levine says again, with regard to the cervical sympathetic, that there is clear evidence that the branches conveyed by it to the pulmonary plexus are indirectly of thoracic origin. He describes their full course, finally ending in the bronchi. Further, he emphasises the fact that sensory fibers are present in the sympathetic, some in addition to the motor axons, whether constrictor or inhibitory. He quotes Brodie and Dixon, to the effect that they agreed that dilator fibers were present even in the vagus, since stimulation of the latter caused dilatation of the bronchi.

Levine further quotes Gask and Ross, who assert: "No conclusions with regard to the sympathetic system in man can be derived from experiments on lower animals whose sympathetic nervous system differs so much from the human." Levine rather stresses, from work of Frazer and Carmichael, that the vagus is not a constrictor of the bronchi at any time, at least in man, and gives his view that the constriction fibers are contained in the sympathetic. He quotes the well-known fact that pyloric and ileocecal valve spasm is due to sympathetic stimulation.

We disagree with his statement, however, when he writes that polyuria and urticaria are to be looked for, or rather, from his

wording, to be expected in all asthmas. This, in our own experience and in that of many others, does not hold true.

We agree on the indirect action of Adrenalin (epinephrin) in relieving the spasm, but oddly enough, in the worst of our sympathetic cases, adrenalin had no effect in that way whatsoever. Rather it tended to cause collapse in the patient, producing marked tachycardia, etc., *but with no relief of spasm*. It was the noting of this effect which led to our investigation as to the possibility of a sympathetic asthma group. The heading number one in Levine's summary suggests that there is sufficient theoretical, pathologic and clinical evidence to show that the dorsal sympathetic nerves, especially the second, third, fourth, fifth, and sixth rami, contain constrictor fibers to the bronchial musculature, as well as sensory bronchial fibers.

Here, then, was supplied to us the anatomic-physiologic explanation of bronchial constriction in frank sympathetic cases, and this we found proved by physiologic and biochemical investigation. At the same time we could not and do not discard the vagal stimulation in other cases, and we must remember that Sercey's careful work, done in human beings, and in those whose larynx had been removed, and also Phillips' work, was too carefully and scientifically performed to discountenance them.

It would be of immense importance to be clear on the effect of irritation of the nose trigger area through the vagus, in its effect on the thoracic sympathetic. At the moment we must be content to assume autonomic imbalance in asthma, with varying vagal and sympathetic preponderance, *especially referred to threshold values*. There is no doubt, however, that Levine's work is of paramount importance, and provides adequate anatomic justification in corroboration of our clinical division of asthma. It is not out of place to stress again the fact that the other basic factors were co-existent in both types of cases. The ability to distinguish the two groups has certainly added to our choice of therapy.

Lastly we urge that, *once the three basic factors are in being*, stimuli affecting the autonomic system from varying loci can precipitate an attack of spasm.

International Clinic.

HEALTH AND POLITICS

It is not in the public interest that health matters should receive the attention of politicians unless or until such questions have been well matured in the medical mind.—SIR KAYE LE FLEMING, Chairman of the Council, British Med. Assn., in The Observer (London), July 26, 1937.

Essential Thrombocytopenic Purpura*

(Report of An Unusual Chronic Case)

By W. E. B. HALL, M. D., St. Joseph, Mo.

THE STUDY of blood dyscrasias frequently presents unusual and unexpected aspects which, at times, suggest a correlation of the various elements of the blood picture and blood forming mechanism. There is the notable instance of the lymphoblastoma group, covering various leukemias, lymphocytomas, Hodgkin's disease, etc. Essential thrombocytopenic purpura, however, has been detailed as a purpuric and hemorrhagic disease with low platelet count, slow clot retraction, and an otherwise not remarkable blood picture, manifested chiefly by clinical changes in the forms of purpura simplex, purpura rheumatica, Henoch's purpura, purpura hemorrhagica, and purpura fulminans, essentially without pathologic or etiologic basis. Frequently diagnosis is a matter of exclusion, in which hemophilia, characterized by delayed coagulation time, toxemia, bloodstream infection, and other blood dyscrasias must be excluded.

An unusual form of essential thrombocytopenic purpura is presented in a case which showed a slow improvement with liver and liver extracts, after repeated transfusions and splenectomy had failed to stop a grave, idiopathic purpura hemorrhage. This case was not unlike primary pernicious anemia, in that there was a recurrence of purpura whenever liver therapy lapsed. A characteristic pathologic picture was exhibited in the lymphatic system.

Case Report

The patient was a white male, age 14. In May, 1932, the boy was troubled with epistaxis, lasting for a week or ten days. Bleeding was so pronounced as to cause fainting and marked weakness. The rest of the summer and all winter he was well, until February 1933. At that time the family contracted sore throat, diagnosed as diphtheria, but not bacteriologically verified. A prophylactic dose of diphtheria antitoxin was given to the boy. After this, he appeared below par, generally inactive, and not eating well. About May 6, 1933, he developed numerous "bruised" spots on his arms and legs. On May 19, his nose began to bleed, continuing seriously at intervals for two days.

On May 27, severe epistaxis recurred. The red blood-cell count was 4,400,000; the platelet count was 10,000; while the bleeding time and coagulation were not abnormal. There was no clot retraction. Three

hundred (300) cc. of whole blood were given by direct transfusion. Epistaxis and petechiae developed frequently and alarmingly, usually without associated fever. The platelet count fluctuated between 5,000 and 20,000, and at times the spleen appeared palpable. At this time, the anterior and posterior cervical, axillary, and inguinal glands were found to be numerous, small, discrete, freely movable, and not tender. These were reported by his mother to have been unchanged in size for over seven years. Aside from the conditions noted, the findings of a general physical examination were essentially normal.

Whole blood transfusions were repeated over short intervals, but appeared to have little effect on the constantly recurring epistaxis. Nasal packs were of little use. On June 10, conjunctival hemorrhage appeared. At this time, the case was definitely diagnosed as chronic thrombocytopenic purpura, which would not respond to transfusions. Splenectomy was recommended, as it was felt that failure to take this therapeutic step might result in probably fatal cerebral hemorrhage.

On June 16, a high left-oblique rectus incision was made. Satisfactory exposure was obtained and, after doubly clamping and ligating the pedicle, the spleen was removed with comparative ease. There was almost no bleeding during the operation, and the patient was not visibly shocked. Two hundred twenty (220) cc. of whole blood were given by transfusion at operation.

Four days after the operation, the platelet count rapidly mounted to a level of 60,000, then 90,000, gradually falling off and returning to 20,000 two days later. The platelet count remained at this level or slightly below for the rest of the patient's hospitalization. The petechiae decreased in number, and nosebleeds occurred only occasionally. Four days after operation, concurrent with the rise in platelets, liver extract was given, at times supplemented with fibrinogen.

In addition to the platelet increase, a rise in the leukocyte count was noted, occurring simultaneously with the splenectomy, reaching an apex of 22,650 on June 21, followed by a fairly rapid drop to a general level of 12,000, which was persistently maintained. This was noticeably higher than the average of 8,000 before splenectomy.

After returning home from the hospital, in July 1933, the patient ate one pound of beef liver every day, also taking ventriculin three times a day. Red meats supplemented chicken livers. Later, liverwurst and liver cheese were given, but these were gradu-

* From the department of pathology, St. Joseph's Hospital.

ally discontinued. Bleeding recurred, intramuscular injections of liver extract were forced, and the patient was able to enter school three weeks later than usual.

As bleeding, purpura, and petechiae were lessening, the liver extract was then given only intermittently. Usually this cessation would soon be followed by recurrence of hemorrhage. One was particularly severe in April, 1934, following a severe case of tonsillitis, forcing him to remain from school for a month. This bleeding was alarming and persistent. He was immediately put on one pound of liver a day, with chicken livers and rich foods. Ventriculin and 1 to 2 cc. of intramuscular liver injections were given every other day for one month. No transfusions were given at this time. Subsequent lapses in diet were associated with recurrent petechiae. Recurrent attacks of tonsillitis were not followed by bleeding or purpura.

On October 26, 1935, after a severe attack of tonsillitis and after preliminary diet and medication, the patient was readmitted to hospital, at which time the bleeding time was found to be one and one-half minutes and the platelet count 250,000. Tonsillectomy was performed, disclosing a pathologic picture closely resembling that of the previously removed spleen. Following tonsillectomy, he showed no evidence of petechiae, purpura, or bleeding. Since then, the patient has been in excellent health, on a full, ample diet, with a moderately frequent, but not regulated, use of liver in his food. Prior to tonsillectomy, the longest interval without bleeding was a little over a month, following the last previous administration of liver. It was observed that the administration of liver readily controlled bleeding and purpura.

Pathologist's Report. (June 16, 1933): The spleen measured 13.5x6.5x3.3 cm. and maintained its normal shape; the capsule was not thickened and appeared slightly wrinkled. It was not sharply notched, and felt normal in consistency, with no gross evidence of fibrosis. The pulp scraped normally and the cut surfaces were normal in appearance. The splenic corpuscles were very distinct and numerous.

Microsections showed that the capsule and trabeculae did not display fibrous connective tissue increase. There was no evidence of reticulo-endothelial cell hyperplasia. The pulp spaces contained the normal proportion of cells. The splenic follicles showed moderate hyperplasia and were rather abundant; their vessel walls appeared essentially normal. Some lymph nodules showed a rather marked hyperplasia of the lymphoblasts or germinal cells. The follicles were sharply defined against the surrounding splenic pulp.

Diagnosis: Hyperplasia of the lymphoid follicles of the spleen.

October 26, 1935: The excised tonsils were considerably hypertrophied, deeply cryptic, moderately congested, and only slightly fibrous.

Microsections showed that the tonsillar surfaces were formed of thick, stratified, squamous epithelium, supported on a considerably scarred connective tissue. Below this, lymphoid fields showed very large, hyperplastic, hypertrophied active germinal follicles. Crypts were usually closed, forming isolated, fused columns of squamous epithelium, often hyalinized or degenerating and fragmenting, with invasion by polymorphonuclear leukocytes, as well as plasma cells, eosinophils, etc., which might also be found in the scarred subsurface stroma. No actual accumulation of suppurative products was present, however.

Diagnosis: Chronic hypertrophic tonsillitis, with lymphoid hyperplasia.

Comment.

The case under discussion showed the importance of considering the lymphoid system in general, rather than the spleen alone, from a therapeutic standpoint. In view of the generalized hyperplasia and hypertrophy of the spleen, tonsils, and general lymph-glandular system, a close connection may be supposed between the thrombocytopenia and the thrombocytopoietic tissues, possibly in the nature of a disturbance or even replacement of the normal platelet-forming elements.

Bleeding, etc., were found to be controlled by the administration of liver and liver extracts. Cessation of this therapy was usually followed, within a month, by the typical purpuric picture. There was no evidence of lymphocytic change in the blood picture prior to splenectomy, and bleeding was usually accompanied by a platelet count between 5,000 and 20,000 per cmm., but no other remarkable blood change except delayed clot retraction.

Splenectomy produced only a very temporary elevation in the platelet count, four days after operation, but did produce a more or less permanent elevation of the leukocyte count, with lymphocytosis.

The cessation of bleeding following tonsillectomy, even in the absence of the milder forms of liver therapy, showed the importance of removal of foci of infection in this condition. Chronic tonsillitis was the insult factor in the lymphoid hyperplasia, although no connection was noted between the purpura and attacks of tonsillitis.

A normal platelet count was slowly effected by liver therapy, but remissions continued to occur with the lapse of liver therapy and in the presence of foci of infection, in the tonsils.

A total of twelve transfusions and intra-gluteal injections of blood served only to control the anemia and blood loss, but did not affect the platelets or the frequency of hemorrhage.

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The Elliott Method of Thermotherapy As an Office Procedure

By MARTIN LEISER, M.D., Poughkeepsie, N. Y.

THERE have appeared lately a number of reports of a new method of conservative treatment of pelvic inflammatory conditions, by intravaginal conductive heat, as devised by Dr. Chas. R. Elliott. Most of these come from large medical centers and hospitals, and the results obtained are presented from a large number of cases.

Although our great medical institutions do not require corroboration, nor can a dissenting opinion be voiced with authority, it may be justifiable, since this journal has devoted its pages as a forum for the general practitioner, to present this report in order to show what can be accomplished in the practicing physician's own office.

Pelvic inflammations contribute a large share to the army of chronically sick women. Gonorrhea and postpartum (mostly streptococcal) infections, the two most common sources of female pelvic disorders, have always been difficult problems for the physician. With the advance of modern abdominal surgery, operation, and very often early operation, was considered the method of choice. Soon, however, it was found that the end results from operation were, in many instances, far from being satisfactory. Too often the operation, once begun, necessitated the removal of the whole or a major part of both ovaries and tubes; this left an intraperitoneal scar, subject to adhesions

and continued pains, and at the same time deprived the individual of the essential functions of a well-regulated menstrual cycle, not to speak of the sterilizing effect that many operations had.

Based upon such results, Simpson¹ and Crossen², independently and (1909) almost simultaneously, recommended a more conservative treatment of the problem. Both authors advocated operation only after all acute symptoms had subsided, and even then allowed sufficient time for the inflammation to become sterile.

It can not be within the scope of this paper to enumerate all articles which have appeared since that time advising a conservative treatment of pelvic inflammations. It may be said, however, that although there are still some men who favor early operative procedures, the majority of surgeons and gynecologists in this country, as well as in Europe, are definitely against it, at least in the acute and subacute stages. As for the late operation, it will be shown that the introduction of the Elliott method has helped to reduce the frequency of surgical interference, even in the chronic cases.

Heat Treatments

Among the conservative measures, the application of heat in one form or another has always been in the foreground. From

the studies of A. Bier we know that local heat, by creating hyperemia through vasodilatation, benefits almost every form of inflammation, especially in the chronic stage. This benefit is due to an increase in exudation, which is ordinarily less pronounced in chronic cases, where the infiltrative and proliferative changes prevail. This is what often makes an operation so difficult and unsatisfactory. The increase in exudation means a greater afflux of leukocytes which, permeating through the walls of the small bloodvessels, act as phagocytes and thus accelerate the resorption of the inflammation.

Although this explanation of the pathologic mechanism may be hypothetical, it seems to be satisfactory. Even the good results which one obtains with an ice bag are not a contradiction. It has been shown conclusively, by Kellogg and others, that vasoconstriction (cold) at the surface creates a corresponding vasodilatation (heat) in the deeper-lying tissues and organs. The superiority of diathermy and of the more recently used short-wave radiothermy, with their lesser skin- and greater depth-heat, points in the same direction. Conductive heat, as produced by hot-water bottles, electric pads, etc., and radiant heat have not given such satisfying results where deep-seated inflammation exists, as is the case in the female pelvis.

A long step forward was made when, in 1923, Gellhorn⁸ could show that the mucous membrane of the vagina is less sensitive to heat than is the skin of the vulva or the perineum. His method of using 2 gallons of hot water, at a temperature of from 115° to 120° F., as a vaginal douche, and at the same time protecting the vulva and perineum with petrolatum, gave him such good results that, in many cases, recovery without the need of an operation was achieved. This mode of application is, however, very troublesome and inconvenient for the patient.

Medical diathermy has been intensively used, and with very good results, by various authorities. One electrode is placed in the vagina, the other on the abdomen or the back. Every practitioner who has a diathermy apparatus in his office, will be able to produce good results in numerous cases of pelvic inflammation. As a drawback there always exists the danger of burns and the difficulty of an effective technic. But more important seems to be the fact that no electrode has been devised which is equally suited for every vagina. Over-heating at some point and uneven distribution can not always be avoided. It is this disadvantage which is completely eliminated in the machine of Dr. Chas. R. Elliott.

The Elliott Apparatus

This apparatus consists chiefly of an electrically-heated water tank, inside of which a motor-driven suction and pressure pump rotates and connects with two outlets governed by independent valves. From these outlets two flexible rubber hoses lead to a Y-shaped rubber bag, which is inserted into the vagina. By opening a valve, the water, which has been heated in advance, starts to flow and to distend the bag; at the same time the suction valve, which is also opened, provides for the necessary backflow and prevents excessive pressure. In this way a continuous circulation of water at a desired pressure, is maintained. Because of the hydraulic medium, equal pressure is always exerted upon the walls of the vagina; while the bag distends the vagina and creates a larger surface for hyperemia. These two factors alone—equal pressure and distention—illustrate the advantage of the Elliott method over diathermy.

The water in the tank, and therefore that inside of the bag, can be kept at a constant temperature by means of a thermostat, which may be set at predetermined degrees of heat. When the thermometer, which is also provided, registers a temperature of 130° F. in the water which circulates inside of the bag, the conductive heat in the pelvis will be, according to Holden, who made extensive studies on this question, at about 106° F. This temperature is well tolerated for an hour, which constitutes one treatment.

Clinical Results

To Holden we are also indebted for the introduction of the Elliott method into clinical medicine. The vast material of Bellevue Hospital was available for a thorough test of the merits of this method of heat treatment. In 1931, Holden and Gurnee⁴ could already report that they had thus treated 500 cases of all kinds of pelvic inflammations. Their results were excellent. Between 85 and 93 percent of their series, varying with the type of lesion, showed at the time of discharge, either no pathosis or a marked improvement. This small percentage (between 17 and 7) compares, in their survey, with 70 to 100 percent of failures by the previously used conservative treatment at the same hospital and on the same type of cases. Accordingly the frequency of surgical interference was greatly diminished.

Similarly good results were subsequently reported by Jacobs, Vaughan, and Gellhorn⁵, and confirmed by Graham⁶. Counseller⁷ published the effectiveness of the Elliott method on 43 cases of pelvic inflammation treated at the Mayo Clinic. Nineteen (19) of these 43 patients were operated upon, and the Elliott treatment only given follow-

ing the operation, with 100 percent satisfactory results. In 24 cases treated non-surgically, the majority being ambulant patients, the satisfactory results reached 70 percent. Of 56 cases reported by Mussey⁹, only 13 were not improved, leaving about 77 percent of good results. From the Miami Valley Hospital, in Dayton, Ohio, a paper was published by Doan and Simpson⁸, stating that, in 101 cases of pelvic inflammatory diseases, satisfactory results could be obtained in about 92 percent. A very interesting contribution to the literature was made by Moore¹⁰, who used the Elliott method in 3 cases of acute puerperal infection, with complete recovery in all three. Michel and Taube¹¹, who treated upwards of a thousand patients, say that their operative intervention was reduced over 85 percent, and that cure could be achieved without the need of an operation.

This abstract of the literature may not be complete. There are a number of papers dealing with this method in other lines of medicine, which do not belong within the scope of this article, but the consensus seems to be well established that the Elliott method of thermotherapy gives more than satisfactory results in all kinds of pelvic inflammation; that operation has become unnecessary to a large extent; and that, wherever surgical interference was required, the operation in itself was rendered less difficult and the recovery a better one.

In my own cases I followed the instructions of Holden and others, as given in the literature, and also personal observations made at Bellevue Hospital. A careful history, especially relating to the menstrual data^{*}, was taken from each patient, and a complete physical check-up was made prior to the first treatment. A pelvic examination, including smears from the urethra and cervix for gonococci, and from the vagina for trichomonas followed; the exact size of the pelvic lesion was recorded, whereby a simplified drawing often helped to remember subsequent changes.

Technic

Since almost all of the patients covered in this report were not sick enough to require hospitalization, the treatment was given at the office. The patient was instructed to have a thorough bowel movement before coming; if not spontaneously, then an enema was to be given immediately prior to the appointment. The patient was then placed, with the bladder emptied, in a recumbent position on a comfortably upholstered treatment couch.

^{*}Pelvic inflammations are often associated with irregularities of the menstrual flow, and for this reason the return to a more normal order will be one more way to determine the value of the treatments.

It is, in my opinion, very important that the patient be made as comfortable as possible. She has to lie absolutely quiet for a whole hour and we should not forget the little imponderables, on which so much depends, whether our patients return to our offices or not.

The rubber bag, which has been sterilized by boiling, is next connected tightly with the rubber hoses, and the pressure valve is opened to control the correct expansion, determine the intactness of the bag, and to draw all air out. This valve is closed again and the suction valve is left open. Through this manipulation a vacuum will be created inside of the bag, and it can then be easily folded together and inserted. This is done very gently and slowly, the index finger being used as a guide. The outside of the bag is covered with a lubricating jelly, such as "K-Y." The insertion is rarely painful, though a nervous patient may be apprehensive at the first treatment. One ought to take care, however, that no hairs from the vulva are drawn into the vagina, since this may cause considerable discomfort.

As soon as the bag has been deeply inserted, the pressure valve is opened and the index finger, which has been left in the vagina, will feel the bag distend. It is withdrawn as soon as the patient has the feeling of moderate fullness in the vagina.

At this point attention has to be given to protection of the vulva from burns. The sensitivity of the vulva to heat is much greater than that of the vagina, and for this reason gauze should be wrapped around the shaft of the bag, and the labia spread apart as far as possible. In this way the bag is always kept away from the vulva and a burn is impossible. Some cotton placed on the perineum will prevent the bag from sagging downwards. The flexible rubber-hoses are wrapped in a towel, thus keeping them from touching the inside of the thighs. These precautions are very important and ought to be followed carefully.

From time to time during the course of the treatment one should see that the gauze wrapping around the shaft of the bag is still in its original place and adjust it if necessary. In all the treatments that I have given, I have never caused a single burn.

After the first 15 minutes of treatment it is possible to open the pressure valve somewhat more and give a greater degree of distension, for by this time the patient has become accustomed to the heat and will be able to tolerate the increase which is created through the larger surface contact of the more inflated bag.

Usually the pressure at the beginning is about 1.5 pounds, as indicated on the machine's manometer, and is later increased to about 2 to 2.5 pounds. The starting tem-

perature is between 114° and 118° F., and is then gradually raised $\frac{1}{4}$ of a degree every minute, so that, after 15 minutes, a temperature of 125 to 127° has been reached. It is advisable, at the first one or two treatments, to keep the heat at this level, which can easily be done by setting the thermostat for this point. At subsequent treatments the heat may go up as high as 130° F., but should never be brought to a higher point; at each session, however, the treatment is again started with the same lower temperature and pressure as explained.

It seems, from my own observations, that it is essential to continue the treatment for a full hour. At the first sessions the patient may become nervous after from 30 to 40 minutes, but a little encouraging admonition will help to carry even a nervous individual over the remainder of the hour.

At the end of the treatment it is advisable first to shut off the pressure valve; the suction alone will then empty the bag very rapidly, so that, when the bag is withdrawn, it has already collapsed and can easily be removed without fear of causing pain.

Since there will be an increase of discharge, the vagina is swabbed and the patient is instructed that she may experience more discharge the next day. A lukewarm douche will help to alleviate her discomfort, should it become too annoying.

During the menses no treatments were given, although, in the opinion of Holden and others, this does not constitute a contraindication. Otherwise the treatments were no more than 2 or 3 days apart. In this way 2 or 3 treatments could be given in a week.

With this technic I have given a total of 127 treatments to 19 cases in private practice. I will refrain from making statistical claims, as this material is not large enough to be used in such a way. It may be of value, however, to give short abstracts of some case histories, which will best illustrate the advantages, as well as the shortcomings of the method.

Case Reports

Case 1:—J. T., a woman 21 years of age, a primipara, had been delivered at home by a midwife after a very prolonged spontaneous labor of 40 hours' duration. When, two hours after the birth of the child, a hemorrhage set in and the placenta was still attached, I was called.

After unsuccessful attempts to extract the placenta by Pituitrin injections and the Credé maneuver, manual separation had to be done, since the patient was constantly losing blood. The placenta was extracted intact and the hemorrhage stopped. However, within the next few weeks, a tubovarian abscess developed. Fever of 102° to 103° F. was present for about 4 weeks. The general condition of the patient remained fair. Routine measures, such as

icebags and Fowler's position, failed to reduce the abscess, which by that time had grown into a mass that filled the whole pelvis and reached up in the abdomen as high as the umbilicus.

The Elliott method of treatment, which then became available, was instituted on the 35th day postpartum, and 15 treatments were given at daily intervals. It was remarkable how the mass in the abdomen shrunk, the temperature returning to normal after 10 days. The mass itself was reduced to the size of an egg and could be felt only by pelvic examination.

A subsequent laparotomy showed adhesion of the omentum to the left tube, which was of index-finger thickness. A separation of adhesions, a left salpingo-oophorectomy, and an appendectomy were performed by Dr. Simon. The recovery was uneventful. Eight ambulant Elliott treatments were given after discharge from the hospital. The patient is free of symptoms after one year's observation.

Case 2:—E. G., a 31-year-old woman, whose history revealed acute gonorrhea of three weeks' duration, was first seen during an attack of acute abdominal pains on her left side, with fever of 103° F. A left salpingitis, with a tumor the size of an egg, was diagnosed, and six Elliott treatments were given. The patient is now free of pains, and only slight enlargement of the left tube remains.

Case 3:—M. J., 25 years old, had an appendectomy two years before I saw her, and a relaparotomy one year previous, done for a right pyosalpinx, when salpingostomy was performed and the recovery was complicated by pelvic peritonitis. Since the last operation, there have always been severe pains in the abdomen, and an acute exacerbation, accompanied with peritoneal symptoms, forced this patient to come to the office. The adnexa on both sides were very tender and enlarged.

After three Elliott treatments there was a marked subjective improvement, the peritoneal symptoms had subsided, and the tenderness over the adnexa was greatly reduced. The patient then left town and could not be followed up.

Case 4:—H. S., 28 years old, had acute abdominal pain, with vomiting, for three days. The right adnexa were tender and a tumor the size of a plum was present. There was complete relief after five Elliott treatments, and the right adnexa returned to a normal size. The patient is now five months pregnant and free from complaints.

Case 5:—E. C., 27 years of age, had a pelvic infection two years previous, which had cleared up under hospitalization. Following an abortion in the second month, the old infection became acute again, a moderate degree of fever and severe pains in the left lower abdominal quadrant indicating the exacerbation. The left adnexa were 3 by 2 inches in diameter and very tender.

After four Elliott treatments, the enlargement of these organs was only slight. She felt better and was able to work, but

experienced occasional severe pains in her left side. A new series of Elliott treatments has been advised.

Discussion

Of this group of 5 cases, which may be generally classified as the more acute pelvic infections, an operation was necessary only in one case (No. 1); but it should be borne in mind that this patient presented a very severe and extended postpartum infection. The result of the Elliott method here was perhaps the best. The operation would not have been so comparatively easy and the recovery so uneventful, had not the preceding treatments helped to absorb most of the inflammatory mass, which reached up to the umbilicus. It was particularly interesting to note how this mass, whose outlines had been marked on the patient's abdomen with ink, shrank from day to day under the treatment, so that finally the tumor had disappeared behind the symphysis.

Of the other four patients in this group, one escaped further observation, after some improvement was felt, by discontinuing treatment too early. The others may still present some palpable pathoses, but are free from complaints most of the time, and have been able to resume their work. One patient became pregnant.

To a second group belong 13 cases of chronic pelvic inflammation. Since the histories and findings in all these patients are somewhat alike, this group may be dealt with in general and the enumeration of each patient may be omitted. The majority of these patients were between 24 and 36 years of age. (One patient was 20 years, another 46 years old.) They received from a minimum of 3 to a maximum of 12 treatments.

Common to all these cases were the symptoms of pains in the lower abdomen and the back, dysmenorrhea, and discharge. Palpation revealed either one or both adnexa swollen and tender, sometimes associated with a more or less fixed retroversion of the uterus. Sometimes a posterior perimetritis could be felt. Gonococci were present in one case, although the history was suspicious for gonorrhea in more than one case.

After the treatments a general improvement of the subjective symptoms was almost universally noted, so that the patients were able to follow their regular domestic or commercial occupations without any interruption or complaints. In one case an operation, which had been advised previously, became unnecessary. This patient is now 3 months pregnant and no pathosis could be found. In another case a perimetritic infiltration in the cul-de-sac disappeared, after 8 treatments, almost completely, with subsiding of the subjective symptoms.

Aside from that, the results obtained in this group are less satisfactory from an anatomic point of view, chiefly because the pathologic changes were never so prominent and their subsequent "disappearance" will always be regarded with a good deal of question. The functional end-result was, however, almost always good.

One case may clearly be marked as a failure. In this patient the local condition, a chronically inflamed tube, was complicated by a general mental depression, under which this woman had suffered since her marriage. A psychiatrist, who had previously been consulted in regard to the question of a psychoanalysis, wanted to have the pelvic disorder cleared up before taking the patient under his own care. In this case an operation will eventually have to be considered.

Included in this group are 2 cases of long-standing sterility. In one of these, an old pelvic inflammation had resulted in occlusion of the tubes, as shown by a negative Rubin test. Eight Elliott treatments failed to open the tubes, because a second insufflation was likewise negative. In the other sterility case, with a history of previous pelvic inflammation and only slight palpable changes in the tubes, the Rubin test was positive after 6 treatments at a pressure of 150 mm. of mercury. This patient has not yet become pregnant. It is difficult to evaluate this case, since no Rubin test was made prior to the first treatment. The previous history and the fact that an increased pressure was necessary to inflate the tubes, justify the use of the Elliott method.

In a third case of sterility, which was not included in the last group because there were no inflammatory changes, 6 treatments were given. Here hypogenitalism, with infantile uterus, was thought to be the cause of the sterility and the treatments were administered with the idea of producing a general hyperemia of the pelvis. Previous hormone therapy had been unsuccessful. The Rubin test showed some influence of the treatments, inasmuch as the pressure, which had previously been up to 150 mm., reached only 120 mm. of mercury at a second attempt, when air could be blown through the tubes. Since this patient, too, did not become pregnant after several months of observation, the Elliott method did not prove to be a success in my sterility cases. It is understood that other reasons for the sterility had been ruled out beforehand.

Although the experience I have gained with the Elliott machine is based on only a small number of cases, it confirms the reports in the literature. The treatments are easily administered in the office and, with the necessary precautions, mishaps,

such as burns, can be completely avoided. On the whole, gratifying results were obtained by these therapeutic office procedures, without the need of hospitalization.

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54 Noxon St.

★ Notes and Abstracts ★

Modern Treatment of Apoplexy*

PHYSICAL THERAPY CAN DO LITTLE or nothing for patients whose hemiplegia, following cerebral hemorrhage, began more than two years previously. In recent cases, especially those with a good prognosis of a fair length of survival, radiant heat is prescribed during the flaccid stage of paralysis, twice daily for 15 minutes to each limb, and for 5 minutes to the face, if the latter is involved, followed by gentle massage. Each joint is passively carried through its full range of motion, so that contractures and ankylosis do not develop. Low-voltage interrupted currents produce muscular contractions of desired intensity at a time when voluntary motion is suspended.

Spasticity is prevented by light plaster-of-paris splints, especial attention being given to the hand and wrist (hyperextension). The shoulder joint is held in abduction and external rotation by means of pillows, the elbow in semi-flexion and supination, and the hand and fingers in hyperextension by an anterior molded splint. When spasticity appears, all interrupted current is stopped. Passive motion is continued, adding slow, steady stretching to prevent contractures. Immersion of the limb in a local warm bath is of value in obtaining temporary relaxation and incidentally increasing the circulation.

The patient must be instructed to walk properly and to fight the tendency to swing the leg like a scythe. Standing between two chairs for support, he may practice various exercises, particularly that of putting forward the paralyzed leg by heel-toeing. The

fine movements of the fingers should be re-educated by such purposeful exercises as grasping a ball, writing, drawing, painting, and filling and refilling a glass of water.

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Foreign Bodies in the Ear

WHEN A PATIENT IS SEEN with a live insect in his ear, cure of the pain and death of the insect are obtained by flooding the ear with pure alcohol, and then removing the insect by syringing out the ear with warm water. Do not use forceps in removing foreign bodies, as a push movement is made by the instrument before contact is made and the object is likely to be forced further back. Never use force in syringing out an ear, as ear drums have been ruptured by undue pressure.—E. HARRISON GRIFFIN, M.D., in *Med. Rec.*, May 19, 1937.

Do Not Immobilize Sprains

AMONG COMMON conditions encountered in general practice, sprains and other injuries to joints are of frequent occurrence and it is often such injuries that, by inappropriate treatment, are followed by chronic disabilities that cause the patients to drift into the hands of osteopaths.

The practitioner is handicapped by the doctrine of absolute rest for inflamed structures. Too great a prolongation of rest in sprains and other injuries of joints, muscles, tendons, and fasciae results in the formation of adhesions, and the resulting pain and interference with function may be pro-

*Arch. Phys. Ther., X-Ray, Rad., Aug., 1937.

longed if adequate treatment be withheld. Adhesions having been brought about in this way, very few practitioners have been taught their cardinal signs and symptoms or to appreciate the possibilities of manipulative treatment.—A. G. TIMBRELL FISHER, M.D., Ch.B., F.R.C.S., in *Brit. J. Phys. Med.*, May, 1937.

Clinical Results with Short-Wave Therapy*

IN CHEST CASES, especially pneumonia and pleurisy, the patients are relieved of pain and fever within from 24 to 48 hours, and there is often an improvement in cyanosis, following short-wave treatments. Chronic cough was improved in all cases.

Boils were aborted, if treated early; in severe cases, localization occurred almost immediately, the core was extruded after four treatments, and healing took place with no obvious scar. Septic fingers were given an average of four treatments, with the result that infection was quickly localized and the pus could be let out with just a nick and without loss of nails.

Dental abscesses were localized quickly. Lumbago and sciatica were cured with from 2 to 10 treatments, usually without recurrence. Chronic arthritides were relieved of pain and movement became free and easy.

The machine used was an Ultratherm, with a wave-length of 6 meters. Treatments were begun at five minutes, and gradually increased to ten or twenty. In acute infections, the treatments are given daily for five days, then at two- or three-day intervals.

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Prolonged Relief of Pain in Rectal Conditions

EUCUPIN is a powerful germicidal agent and local anesthetic. When combined with 1 percent Novocain (procaine) solution, the use of Eucupin dihydrochloride, 0.1 percent, results in immediate anesthesia, complete dilatation of the sphincter, and post-operative anesthesia or hypesthesia for from three to seven days. Injections are made into the sphincter and circumanal tissues, and the fluid massaged with one finger in the rectum. This anesthetic has been used in various types of surgical procedures, other than rectal.—S. D. MANHEIM, M.D., and MARKS M. MARKS, M.D., in *Am. J. S.*, Jan., 1938.

**Brit. J. Phys. Med.*, Sept., 1936.

Vague Abdominal Complaints

THOSE NUMEROUS PATIENTS who fill the waiting rooms of gastro-enterologists, complaining of vague abdominal pains, loss of appetite, and constipation, are usually diagnosed as "nervous dyspeptics." Here the general practitioner can do much to tone up the vegetative nervous system with galvanism, by strengthening the whole body with ultraviolet irradiations, and by relieving painful attacks with carefully applied diathermy.—A. P. CAWADIAS, M.D., in *Brit. J. Phys. Med.*, March, 1937.

Treatment of the Malnourished Child

GREAT BENEFIT followed the use of the carbon-arc ultraviolet lamp in cases of debility, malnutrition, anemia, subacute rheumatism, bronchitis, and catarrhal conditions, in infancy and childhood.—EVA MORTON, M.D., in *Br. J. Child. Dis.*, Nov., 1936.

★ Books ★ Office Surgery

OFFICE SURGERY SYMPOSIUM. By 88 Authors. New York: The American Journal of Surgery (April, 1937). Price, \$4.00.

This special issue of the *American Journal of Surgery* is actually a handbook of 416 pages, describing the sort of surgical practice which is encountered by general practitioners every day in their practice, and is entitled to review as a book and worthy to be included in the library of every active clinician. If it were bound in cloth covers and sold as a volume, it would cost twice as much.

Here the reader will find highly practical suggestions on 88 vitally interesting subjects, rarely discussed adequately in the standard texts on surgery, such as Bedsores, Burns, Fractures of the Nose, Cinders and Splinters, Wens, Peritonsillar Abscess, Acute Retention of Urine, Cervical Polyp, Rupture of Muscles and Tendons, Paronychia, Polydactylism, Imperforate Hymen, and scores of others, written by men who "know their stuff," from personal experience.

This is not a book for the closely specializing operating surgeon, nor for the professor of surgery; but we know of no other place where the medical man in the rural districts, far from the facilities of a modern hospital, can obtain so large an amount of genuinely usable, practice-building information, at a cost anywhere near as low as it can be procured here.

A Living for the Doctor

(The Business of Medicine and the Art of Living)



Associate Editor: Ralph L. Gorrell, B.S.M., M.D., D.N.B.

Socialized Medicine

THE GOOD OR EVIL of any proposed change in the social usage or social structure of a people should be judged by the effect of that proposed reform upon the great mass of the people. What may seem good to one group may seem evil to another, depending entirely upon the viewpoint of each group; therefore, the welfare of the greatest number of people affected by the social change should be the first and only consideration in weighing the good or evil of such a proposition.

I do not feel that it is presumptuous of me to express an opinion upon socialized medicine. For over forty years I have attempted to hold high the banner of medical practice, and in those forty years have been so interested in the social welfare of the people that I have served in public office several times at great monetary cost to me. I now feel that I can express an opinion which is not tinged by any selfish consideration or by any narrow viewpoint.

Medicine and Surgery have made tremendous strides through the years and those advances have been made without Federal Medicine. In fact, there can be little doubt that medicine has advanced further and faster than social reform or the political structure of the world. While the people have struggled along through the centuries to correct their political ills, the science of medicine has advanced bravely and unhampered by being tied to the kite of political reform. Now it is proposed to incorporate the science of medicine with the body politic.

The health of the American people should be the first consideration and it is too important to be kicked about as a political foot-ball. The health of the American Nation is better than that of any other

nation in the world, and statistics prove this statement. Therefore, why change a system which has advanced so far beyond any other system of medicine? If Socialized Medicine had not been tried in other countries there might be some excuse for making another "experiment," but it has been tried, and with its advent in England the rate of morbidity increased. It has been tried in Austria, and the number of medical graduates has dropped sharply and the death curve has risen in proportion. Therefore, weighing the failures of federal Medicine against the success of private medicine, we can draw only one conclusion—that the agitators have not the health of the American people as their interest, and, if they do not hold that sacred, they must indeed confess that politics is their God.

If the Government could not administer medicine any better than it administers its various bureaus; if it indulged in the waste in medicine that it indulges in administering its various functions; if it had as little regard for ability in its doctors as it has in its servants, I fear that the health of America would be in serious jeopardy. Everyone knows or should know that political appointments are often made for political expediency and not because of ability, and we have no reason to believe that it would be any different in Federal Medicine.

Some have pointed out that 430 doctors revolted against the American Medical Association in favor of Federal Medicine. A splitting off of 430 men from an organization of 106,000 members cannot be called much of a revolt and, especially not, when we see that these men are not true family practitioners. Most of them are practicing

on salaries in institutions and do not come in very close personal contact with their patients; therefore they are not representative of the American family doctor.

Under Federal Medicine, the doctor and patient relationship would exist no longer. The doctor's duty would be to the State and not to the patient, and this astounding and un-American utterance is not my statement, but the statement of one close to the administration. By serving each individual patient well the doctor is performing a

greater service to his country than by serving some bureau.

The American people are a proud people and do not wish some political bureau to enter their home life, to administer their routine in illness, to invade their right of privacy. Federal Medicine would be a tragedy for the American health record—the best in the world.

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Member of Congress.

New York City.

Personal Suggestions to Physicians

By FLOYD BURROWS, M.D., Syracuse, N. Y.

I ONCE SUMMONED a brilliant internist to visit a patient of mine in consultation. The unfortunate sick man was alarmingly ill; his family was in a jittery panic; and a gloomy, apprehensive atmosphere prevailed so thickly in the home that a compass was essential to steer through the dismal fog of melancholy.

The specialist laboriously spent forty-five minutes in obtaining and jotting down a history, and only five minutes in examining Mr. X. For this he charged a fee of twenty-five dollars.

The next day when I arrived in the sick room, Mr. X gasped in weak broken tones, "What the devil was the matter with that fellow you brought here yesterday? My God, man, I didn't hire him to write the story of my life; I employed him to save me from death!"

History Taking

People engage doctors to cure them of illness, real or imagined; or if that be impossible to do the next best thing to afford relief and comfort. They do not want grandstand exhibitions or theatrical dramatics. A physician should go at diagnosing and curing maladies as directly as a homing pigeon heads for its cote. Whatever information is required needs to be elicited with skillful directness, such as a shrewd criminal lawyer uses in extracting pertinent evidence. Many times I have sat, bored to death, listening to a dull, lengthy bedside session of futile questioning, by a poky brother doctor who was aimlessly wandering through Sickland as though he had amnesia. Often I have itched for the privilege of arising, like a disciple of Blackstone, to vigorously exclaim, "Your honor, I object to this line of inquiry. It is immaterial, irrelevant, and does not have any bearing whatsoever on the

case." Doctors occasionally ought to take a needed lesson from their gifted legal brothers as to how to get at the kernel of a matter.

One should not become a fanatic on history taking, scribbling over each case until writer's cramp is induced in trying to get down on paper every vestige, every morsel, one can dust, dig, or drag out of a poor, frail victim. I am not denouncing or disparaging a sensible succinct resume of important facts which may prove helpful for consideration. But to go to every bedside like one of Uncle Sam's census hounds, with an intricate printed sheet longer than a mop handle, upon which to inscribe routinely each tiny detail is a poor business maneuver, besides being a waste of valuable time which could be used to better advantage in examining the patient.

Undeniably some exceptional cases do require an exhaustive, exact history; many others demand almost none at all. Why interrogate interminably an old maid about a mole on her nose, or psychoanalyze her because she has a boil on her gluteus maximus?

I was taught when a student, by a keen clinician, not to waste time on non-essentials, but instead to examine patients thoroughly from their "beans" to their bunions. A long, interesting experience practicing medicine and using this method, repeatedly has verified his judgment. I can heartily endorse its value to others.

Laboratory Tests and Surgery

Urging costly laboratory tests and analyses, or recommending expensive x-ray examinations unless there are substantial grounds for surmising their necessity, is another maneuver which I want unqualifiedly to condemn. I sincerely believe a doctor

conscientiously is called upon to safeguard his patient's pocketbook as painstakingly as he strives to promote his health-getting. To put every patient indifferently through needless laboratory high-jumps, hoping by doing so that one of them may accidentally throw light on an obscure infirmity, eats up fees extravagantly and unnecessarily—so much so, sometimes, that a heedless physician has none left for himself when his bill is sent. Doctors are not mercenary in this matter; they are often merely over-zealous. A wise selection of those examinations which are reasonably necessary is what each patient logically requires; no more, no less.

When it may seem necessary to advise surgical measures, I think an excellent rule is to use the same yardstick on the patient you would want him to use on you if your relative positions were reversed and he was the M.D.

If you can say to a patient, "You must be operated upon," and honestly feel that an operation is the only reasonably safe means of affording relief or saving his life, and that you yourself would have to submit to it, if afflicted similarly, then it is safely advisable to urge such a procedure. But if you think cautiously to yourself, "I would defer it and try something else if I were in such a dilemma," play fair with the patient and counsel him accordingly. Surgeons, today, are unquestionably performing near-miracles. Nevertheless there is too much surgery of sorts indulged in recklessly—far too much. Never be a patient's executioner by recommending operations hurriedly or ill-advisedly.

Fees

Every physician should have an established price for medical service to charge all individuals in his community. There is an unfortunate popular impression, prevailing in the minds of many people, that doctors "soak the rich," to offset taking care of the poor for nothing. This erroneous idea ought to be eradicated without delay. Generally speaking, wealthy people should be charged approximately the same as all others for the same service. But if they consume more time; demand more service; and the responsibility of taking care of them is correspondingly greater, it certainly is justifiable to make them pay accordingly. Many of the moneyed class are very exacting and insist on what might be termed "luxury doctor-

ing." Some want two calls when only one is necessary and require all the extra dew-daddles obtainable. They seek needless consultations and consume time by endless questioning and discussion. Others are no more trouble than the so-called poorer classes.

While life is precious to a pauper as well as to a king, and he does not enjoy the prospect of dying, perhaps, any more than royalty does, yet the responsibility shouldered in caring for an indigent person in an almshouse is much less. As much skill may be used on one as the other; but saving the eyesight of a Greta Garbo or performing a caesarean section on an heir to the Woolworth millions is a more ticklish job than doing the same thing for a street walker or a scullery maid. Unquestionably some men are far more valuable assets to the world than others. A Mayo is of more importance than I am, even though I like to stick around as well as either of them. Saving the life of a Ford or a Lindberg is a more useful service to society than the preservation of a ditch digger or a coal miner.

Taking care of a person on whom the public eye is focused—one whom newspapers feature extravagantly, like a Clark Gable, a Jack Dempsey, or even His Honor the Mayor—is certainly worth a larger sum than serving a nonentity. The strain on a doctor's nervous system is much greater for, under such circumstances, he is open to plenty of criticism. He is on one of those tough spots where frequently he is "damned if he does, and damned if he doesn't." If the cards in the sick game run against him, he loses face amazingly; if luck is with him, the winnings are not commensurate with the risk involved. When such occurrences prevail, a much larger fee ought to be demanded.

Some physicians charge rich patients on a percentage scale according to their reputed wealth. If one is worth a hundred thousand dollars, his bill is ninety-nine per cent more than that of the man with only a thousand. Others charge according to the amount of a patient's income. Either way, on such a basis, I wish I could have a crack just once at an ingrowing nail on Henry Ford's toe, or examine a specimen of John D. Jr.'s urine!

713 E. Genesee Street.

GOOD GOVERNMENT

Other things being equal, that is the best government which most liberally lets its subject or citizen alone. Through the whole range of authority, he governs best who governs least.—ARTHUR STEVENS PHELPS.

★ Notes and Abstracts ★

Dealing with the Irregulars

THE REGULAR STUDENT at our universities, after a strenuous and expensive course of study, after giving up 7 or 8 years of his life, is sent out to compete with other men who call themselves Doctors, and are recognized as such by many of the States and by the people in general, but who have, by comparison with the Doctor of Medicine, a smattering of an education, mainly directed along one line of therapeutics.

There is but one way that these matters can be overcome. Not by ignoring these sects, which are increasing as time goes on, but by teaching in our regular universities the methods of the irregulars and by making the course compulsory.

Legislation only stimulates the irregulars to greater efforts, and when it fails, as it has time and again, it only tends to strengthen the hands of those opposed to us as a Medical Fraternity.

Ignoring the existence of rival sects is like burying our heads in the sand like the ostrich. We profess not to see them, but the danger is there just the same.

Teaching in our regular established universities, a reasonable course and making it compulsory, is the only way to make the healing profession a unit, instead of a hodgepodge of sects as it is at present. There will then be no excuse, no necessity, for separate schools, and the student is given the chance to learn the principles of all, to his benefit and the welfare of his patients.

I am quite aware that many new methods and formulae are showered upon us from day to day, of the tremendous labor attendant now in our efforts to keep in the front line, and have no desire to add to the burden by proposing unnecessary studies for the undergraduate, or additional effort for those already in practice, but I believe something will have to be done to eliminate abuses which threaten to undermine the profession to greater or less degree.

E. M. MORGAN, M.D.

Westmount, Que., Can.

A Word to the Young Physician

THE YOUNG PHYSICIAN'S CAREER, especially in a small community, may be blighted for many years by the unfortunate outcome of a prominent case. The moral is that it is wise for the young and inexperienced man,

especially the young surgeon, to avoid the heavy responsibility of a case in which the outlook is definitely bad. It is better to show caution and call in a more experienced man, whose reputation can better stand the strain of a fatality.

To call for a consultation is not a sign of weakness or lack of courage, but a sign of prudence and wisdom and often of moral courage which is appreciated by the laity. Never object to the calling of a consultant when asked for by the family, even though it seems superfluous. Objection on the part of the attending physician leads to all kinds of suspicions, and if matters take a turn for the worse later on, the objector is put in a very unfavorable light.—LINCOLN DAVIS, M.D., in *N. Y. S. M. J.*, Oct. 1, 1937.

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"Send for This Literature."

★ Books ★

Shryock: Medicine and Society

THE DEVELOPMENT OF MODERN MEDICINE. An Interpretation of the Social and Scientific Factors Involved. By Richard Harrison Shryock, Professor of History, Duke University. Philadelphia: University of Pennsylvania Press. 1936. Price, \$4.00.

In this volume the author has reviewed the history of medicine as influenced by social progress, and has correlated medical history with that of the other sciences. The intellectual and cultural environments in the various stages of history are investigated, to show that there is a direct tie between the social development and attitude and the advancement in medicine. It is clear that there has been a pronounced flow of influence between the two. The approach is made in the seventeenth century, but most of the stress has been placed on that period after 1800, when medicine began to emerge as a socially responsible movement. The study is carried on through accounts of the various medical centers—France, Germany, and America—and by an evaluation of the discoveries and theories of outstanding medical men. It should be fascinating reading for both the physician and layman.

J. R. C.

The Seminar

"A Monthly Postgraduate Course"



(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Illinois.)



Problem No. 1 (Neurologic)

Presented by M. O. Robertson, M.D.,
Medora, Ind.

(See CLIN. MED. & SURG., Jan., 1938, p. 38.)

RECAPITULATION: A woman of 27 years, married 10 years and the mother of four healthy children, suffered an attack of vertigo and some other indescribable sensation, and fell on the floor. Her left foot was everted and her clothing stained as if with menstrual blood.

Her mother, two brothers, and three sisters are living and well; her father died at age 53, of "dropsy." In childhood she sustained a moderate injury to the forehead and had an abscess in the right temple region. At age 17, she had an attack of arthritis, from which she fully recovered.

Three days after the attack of vertigo she had pains like those of labor, and her temperature was 103° F. The next day she aborted a two-month fetus and her temperature became normal. Eight days later (on October 24) she began to have convulsions of Jacksonian type, with nystagmus and turning of the head to the left, followed by exceedingly severe and continuous headache, relieved by external pressure and accompanied by nausea. These attacks occurred several times a day for about a week (until Nov. 2). The urine showed phosphaturia.

On November 16 she menstruated, the flow lasting six days and appearing normal. On November 22 she developed spastic paralysis of the left arm and leg and mild delusions.

Requirements: Suggest a tentative diagnosis, giving reasons. What further examination would you have made?

Discussion by E. C. Junger, M.D.,
Soldier, Iowa

This problem is probably not strictly neurologic, but one of brain embolism. I doubt that the fall this patient had when a girl has any connection with her present illness; neither has the abscess about the right temple region. Time rules them out.

Her arthritis when 17 years of age probably is also of no importance in this present sickness, even if it might have been gonorrheal in character. Time rules that out as a factor now.

This woman was pregnant. Her fall to the floor was probably due to an embolism originating from a vein in the uterine wall, at or near the implanted placenta. The thrombotic condition at this site was probably the main cause of the abortion. The fever followed a mixed infection present in uterine cavity or in the blood stream.

The embolism, if it was infected, might change the brain thrombosis into an abscess in a week or two. The resulting intracranial pressure would produce the headache and motor nerve irritation first; paralysis later.

Examination of the eye grounds and spinal fluid might have added some information in this case. X-Rays also might have revealed some shadows inside the skull.

The case looks rather hopeless.

Discussion by Angelo A. Barberio, M.D.,
Brooklyn, N. Y.

In my opinion the patient has developed a hemorrhage of the right middle meningeal artery, the resultant tumor mass being responsible for the symptoms.

I base this tentative diagnosis upon:

- 1.—The history of a fall, followed by a period of apparent good health.
- 2.—The gradual onset of neurologic signs, such as nystagmus and convulsions.

3.—The onset of upper neurone symptoms, due to pressure on the precentral gyrus.

I would suggest an x-ray study of the skull, followed by trephination, if the diagnosis be found correct.

Discussion by John Clark, M.D.,
Independence, Kans.

That this patient has Jacksonian epilepsy there can be little doubt. The thing that is puzzling them is, what is behind this epilepsy? This would be easy if we could point to the specific thing irritating her motor area. Trauma, syphilis, or a new growth are the things to be thought of first as the cause of her trouble. If she has syphilis, our trouble is at once ended. Since she has a cranial scar received in childhood, it is at least to be kept in mind as a possible cause of trauma. It is entirely within the limits of possibility for the fall to have fathered a cerebral tumor, now showing signs of its presence. I cannot recognize the pregnancy or any other remote condition as being likely to give rise to the type of convulsions and paralysis described us in this case.

My further requirements would be a Wassermann test, an eye-ground examination, and possibly a further report on the pulse, fever, and urinalysis. My tentative diagnosis is *brain tumor*.

Discussion by John E. Stoll, M.D.,
Chicago, Ill.

Before attempting to make a sound diagnosis in this case, I should want a much more complete history, blood pressure readings, a more complete physical examination, and at least such laboratory studies as blood-cell counts, hemoglobin and Wassermann tests, a detailed report of a quantitative urinalysis on a 24-hour specimen, and electrical tests of the nerve reactions in the affected parts.

On the basis of the information now available, I should *guess* that the case is one of hysteria.

Closing Comments by Dr. Robertson

The patient was taken to the hospital, where urinalysis was negative, chemically and microscopically. Phosphaturia had been present during the early stage of her nervous attacks. *Eye examination* was not very satisfactory, because of an inability of the patient to cooperate. There was no choked disc, but decided evidence of hemorrhage in both retinae, much worse in the right.

The skull was opened over the left arm motor area (on the right side of the skull), and a small clot found; the brain substance

protruded, as if due to pressure. There was some relief, so that the patient regained partial use of her arm, and was able to work in the field on a farm within one year. She had another baby. There was still spastic paralysis of the arm, which made it more useful than as if a flaccid paralysis had been present. I lost sight of the patient, as I left the community.

Problem No. 3 (Diagnostic)

Presented by P. E. Weimer, M.D.,
Chicago, Ill.

A WHITE, MARRIED, MALE, elevator operator, age 26 years, reported three months ago that he was worried because he had lost 18 pounds in weight in the past few months. He had gradually lost his appetite and, when he felt hungry, he was able to eat only a small portion, because he felt full so soon. He also stated that he had become weak, and at times was unable to finish his work efficiently. On questioning, he mentioned that his umbilicus was tender and was slightly enlarged. When I first saw him he looked pale and presented a picture of anemia and undernourishment.

On examination, I found an enlarged umbilicus, about 1 cm. in diameter, which was hard and sensitive on pressure. Palpation of the epigastrium was negative for any tenderness or mass, except at the umbilicus; in fact, the whole abdomen seemed negative.

At this examination he was 5 feet 8 inches tall, and weighed 115 pounds. There was no pain in the epigastrium following a meal, nor at any time, only the feeling of fullness after eating. No meteorism was present. The blood count was, red cells 3,900,000; leukocytes, 8,500; hemoglobin, (Tallquist), 65 percent. His stools were negative for blood and parasites. His stomach analysis (Ewald) showed:

Total acidity 42
Free acidity 18
No blood
Mucous present
No Sarcines nor Boas-Oppler bacilli.

A thorough roentgenologist made a very careful study of the gastro-intestinal and biliary tracts, and reported negative findings. Hematinics, a high-caloric diet, and belladonna were prescribed. He was not constipated until given liver and iron medication. A second series of G.I. pictures was made, and again reported negative.

Requirements: Suggest diagnosis and treatment, giving reasons. What further examinations would you have made?

Clinical Notes and Abstracts



Modern Serum Therapy*

Diphtheria: The sooner the antitoxin is given, the greater the probability of neutralizing the toxin and the smaller the dose that need be given. Intramuscular administration is recommended for mild or moderate cases; intravenous and intramuscular routes, in neglected, severe, or laryngeal types. *The serum is most valuable when the entire dose is given at the first injection.*

TABLE I

Weight of Patient	Moderate Case	Severe Case
Under 50 pounds	10,000 units	50,000 units
Over 50 pounds	20,000 "	100,000 "

The continuous intravenous administration of large amounts of 10 percent of dextrose in physiologic saline solution seems beneficial to those patients showing toxic effects upon the liver and heart.

Tetanus: As the serum is eliminated from the body rather rapidly, the subcutaneous dose of 1,500 units should be given prophylactically *every week* until the injury is healed.

Treatment is much less successful. Sedation is indicated as an initial procedure in every case. Avertin, by rectum, in a dose of 50 mg. per kilo of body weight, preceded by a cleansing enema, is often effective. Sodium Amytal may be given by mouth or intravenously. Antitoxin should be given as soon as the patient is under control of the sedative. *Give serum intravenously;* a dose of 200,000 units if the incubation period was less than one week (as this type of case is more severe); doses as small as 60,000 units may be employed if the incubation period was a week or longer; *it is the first injection which is of value.* Often there need be no further dose administered. Adrenalin (epinephrin) should be at hand for the treatment of shock.

A special nurse should be on hand 24 hours of the day, to aspirate mucus from the nasopharynx, and to make sure that fatal asphyxia does not occur. Between the fifth to tenth days following the administra-

tion of the serum, serum reactions may occur (convulsions, with or without asphyxia); epinephrin should be administered at the first signs, and phenol-menthol-calamine solution applied to the skin. *Blood transfusions* often cause marked and sudden improvement in cases of severe exhaustion.

Scarlet fever: Due to the fact that the contagious index is low in older children and intimate exposure is often necessary to the development of the disease, I feel that the prophylactic use of scarlet fever horse serum is not to be routinely recommended.*

Scarlet fever convalescent serum has protected 97 percent of individuals for two weeks, when administered in doses of 10 cc. in children and 22 cc. in adults, by the intramuscular route. There are no reactions, as this is human serum. Its use in treatment is equally successful, as the decrease of fever, toxemia, and angina may be expected, the disease is shortened, and fewer complications are observed. If this serum is not available, whole blood from recently recovered cases may be used. Massive intravenous transfusions may yield striking recoveries in toxic, and occasionally in septic cases, especially if the donor has had the disease. The antistreptococcic horse serum of Dick exerts a favorable effect, but often causes reactions.

Poliomyelitis: I am using 100 cc. of convalescent serum intravenously in children, and 200 cc. in adolescents, adults, and bulbar cases, repeated within from 6 to 24 hours if favorable results are not obtained. In the absence of convalescent serum, pooled normal adult serum, or even blood transfusions may be substituted.

Measles: Measles may be prevented or attenuated by the administration of from 3 cc. (in infants) to 10 cc. (in adults) of convalescent serum. Whole blood, in quantities of 30 cc., injected intramuscularly soon after exposure, will also modify the course of measles. Placental extracts are efficacious,

*Granted that Dick's serum may produce reactions and sensitivity to horse serum, it must also be remembered that the nephritis and otitis of scarlet fever, as well as the mortality, are obviated or minimized by preventive injections.—Ed.

*N. Orl. M. & S. J., Sept., 1937.

but have occasionally given severe reactions.

Mumps: From 6 to 12 cc. of whole blood from convalescent patients, when injected before the seventh day after exposure, was highly protective.

Pertussis: Whooping cough may often be prevented by giving 3 cc. of convalescent serum, if administered early in the incubation period. In 20 cc. doses, it may be of help in the treatment. The prevention of pertussis by the commercial vaccines is of definite value.

Erysipelas: Erysipelas antitoxin has definitely been of value in the treatment of the disease. The daily intramuscular injection of 20 to 40 cc. of whole blood has given gratifying results, especially in the case of young infants. In older children, blood transfusions will give striking results in some instances. Repeated ultraviolet or roentgen-ray treatments should be given over the affected parts.

Meningitis: The most effective route for serum administration is the intravenous; 30 to 100 cc. of serum are diluted two or three times with physiologic saline solution, and epinephrin should be at hand. Intraspinal injections of serum should, I believe, still be used, every 24 hours, with intravenous injections every 12 to 24 hours until the infection is under control.

JULIUS H. HESS, M.D.

Chicago, Ill.

Protamine Insulin in Juvenile Diabetes

PROTAMINE INSULIN is successful, but if the physician or the patient is a perfectionist, the preparation will be disappointing, for the cumulative action is such that, if the patient is maintained constantly sugar-free, severe reactions are inevitable. For this reason, our standard of control, based on the twenty-four hour quantitative specimen of urine, is no longer 100 percent, but 90 percent.

Complications of diabetes are markedly reduced: Diabetic coma occurs less frequently, because of the greater margin of safety; degenerative complications (arteriosclerosis, cataracts, dwarfism) should be much reduced, although a five-year period is necessary to determine these points; metabolic disturbances of the skin, including xanthoma, xanthosis, and *neurobiosis lipoidica diabetica*, do not occur during protamine insulin treatment; hepatomegaly usually disappears during such treatment.

Defects of protamine insulin: (1) Slow release of active insulin, which may mean that an injection of regular insulin may

need to be given, in addition to the protamine insulin (increasing the dose of protamine insulin does not increase its speed of action); (2) cumulative action, which may result in a protamine insulin effect for as long as forty-eight hours.—PRISCILLA WHITE, M.D., in *South. M. J.*, Jan., 1938.

Modern Diagnosis of Syphilis*

MR. JONES wakes up one morning to discover a trivial-looking sore on his penis. At this stage, he may not be aware of any other symptoms, except possibly a guilty conscience. He is just sufficiently informed to drop in at Dr. Blank's office on his way to work.

The doctor is not impressed. He applies an antiseptic ointment and tells him to come back if the sore fails to heal, instead of carefully removing some serum from the chancre and sending it to the laboratory for a dark-field examination. When certain simple precautions are observed, spirochetes remain motile in mailing containers for as long as 5 days.

The sore does not heal, and Jones returns with enlarged inguinal glands, and possibly a slight sore throat, due, of course, to "a cold coming on." He indignantly denies any exposure to syphilis. (An aseptic puncture of an enlarged node should have been done, and the serum again examined by the dark-field method.)

Some three months later, Jones returns with a non-itching rash. As an afterthought, he mentions that he has not been feeling energetic of late, and that headaches, anorexia, and falling of the hair have appeared. (The Wassermann reaction is positive in practically all florid syphilitic eruptions). The diagnosis is not "eczema," "pityriasis rosea," nor "toxic eruption."

A. BENSON CANNON, M.D.

New York City.

New Automobiles and New Fractures

TURRET TOPS, all-steel bodies, and shatter-proof glass have not compensated for fast driving, reckless driving, and driving while drunk. The frame of the older type of automobile was chiefly of wood. The outcome of severe accidents was practically demolition of the car. The passengers frequently suffered compound fractures, together with lacerations of soft tissue.

*N. O. M. & S. J., Dec., 1937.

Today, soft tissue is better preserved, but the feature of present-day accidents, which makes their human products more difficult to handle, is the fact that the multiplicity of fractures leaves the patient in a state of more or less profound shock. Overturn accidents, which occur more commonly in open country, result in fractures of the shoulder girdle and vertebral column. Impact fractures, especially in crowded districts, result in fractures of the lower extremities and pelvic girdle.

Any back soreness should be carefully investigated for vertebral fracture; not dismissed as "muscular soreness."—H. B. MACEY, M.D., in *Minn. Med.*, Jan., 1938.

Intestinal Obstruction by a Food Bolus

(A Case Report)

ACUTE INTESTINAL OBSTRUCTION is not an uncommon finding in surgical practice. Gallstones have been reported as the causative factor on several occasions. Occasionally the excessive inclusion of bran and other roughage in the diet has been reported as a cause of obstruction. In this type of case the food particles are small enough to pass along, but they accumulate and form a large mass.

In the case observed and operated upon by me, the causative factor is not only extremely unusual, but the ability of the pylorus to allow a bolus, of a size sufficient to cause an obstruction in the ileum, to pass from the stomach to the duodenum is difficult to explain. I, therefore, feel that the presentation of this case will be interesting.

Case Report

The patient, a woman of 63 years, began to feel ill about 8 P. M. Soon after this she developed "cutting" pain, coming in cramp-like spells, and vomited violently. Then the pain became less severe and was felt more in the upper abdomen. Through a background of dull aching pain came intermittent, sharp, knife-like jabs of pain. She did not know of eating anything that could be responsible for the condition. The family and past history were irrelevant. There had been no previous operations.

Operation: The abdomen was opened through a right rectus incision. When the peritoneal cavity was opened, about one-half pint of amber-colored fluid was found. The appendix was brought into the wound and found to be slightly distended and fibrotic. Part of the small intestines were found to be distended and glistening, and other portions were collapsed. A search was made for the cause of the trouble and a small mass was palpated in the left side of the abdomen. The viscera were then de-

livered into the wound and the mass was again felt. It was about 1½ inches in diameter and was in the small intestine, at the junction of the distended and collapsed loops. The mass was immovable, hard in consistency, and had a leathery feel.

This portion of the small intestine was clamped with a large, single Roosevelt clamp and a longitudinal incision was made over the most prominent portion of the mass, which was yellow in appearance and, on attempting to deliver it with Allis clamps, it tore very easily. The incision was then extended and the mass removed in toto. On removing the mass it was found to be a piece (about one-third) of an orange.

The mucosa was sutured with No. 0 chromic catgut; muscular layers of the intestine were brought together with No. 0 plain catgut; a third suture brought the serosa together. The abdomen was closed in layers, with one Penrose drain. Subsequently the patient remembered eating (?) some orange after taking a dose of salts. She made an uneventful recovery.

Besides this being an unusual obstructive mechanism, I feel that there is also due an explanation of the fact that a portion of orange, large enough to obstruct the small intestine, was able to pass the pylorus, which is not supposed to have as large a lumen as the ileum.

MARTIN BIEDERMAN, M.D.

New York, N. Y.

Shadows in the Mirror of Health*

THE AVERAGE PERSON is not particularly preoccupied with the fact that malignant disease may kill him, nor is he seriously concerned with death. The average person does not think about his health, but he does think about the impression he will make, his social prestige, his capabilities, his ability to beat a neighbor at a game, his chances of promotion, and his appearance. And there are very few men and women of our acquaintance, whatever they say, who, in their hearts would not like to meet their social circle with a greater confidence, their occupation with more proficiency, their embarrassments with calmer self-assurance, their domestic life with more complacent certainty, and the world in general with that additional cheerfulness and vigor which renders life a vivid actuality, rather than a passage of existence.

Today also, disease has changed. It no longer slays ruthlessly in epidemics, but insidiously cripples hearts, hardens arteries, ruins teeth, warps and stunts development, shatters nerves, and produces morbid moods

*N. Y. S. J. M., Sept. 15, 1937.

and manners which destroy or cripple confidence, initiative, and efficiency.

Lassitude, apprehension, and despondency are the symptoms of early stages of disability. We must not await the establishment of structural defect or organic disease before we strike.

But how shall we lock the stable door when we are not summoned until the horse is stolen, or at best the thief is already in the yard. Preventive medicine of the future must devise ways of solving the problems of community wellbeing before disorder blunts the initiative and enthusiasm, undermines self-reliance and determination, dulls hope, and robs the masses of fortitude, tolerance, and self-control, without which no modern community can prosper.

This cannot be done unless *we, the physicians, reeducate ourselves* away from the obsolete training of not recognizing disease until it is physically or mentally established, the last grim stage of a tragedy which no longer can be averted, but involves, besides the victim himself, those who are near and dear to him. This attitude of Medicine encourages suffering; distracts attention from the inefficiency of the employed and fastens it on the unemployable; exaggerates the importance of the simple-minded or the nervous wreck; and ignores the restless, the discontented, the impatient, the tired, the lethargic, and depressed.

T. WINGATE TODD, M.D.

Cleveland, Ohio.

Thoughtful Abstracting for You

THE AVERAGE PHYSICIAN wishes to have medical knowledge presented to him in as compact and readable form as possible. Such a desire has resulted in the abstract section of medical magazines, wherein one may read quickly of the ideas and practice of medical men all over the world.

It is one thing to abstract, mechanically, the new, the sensational, or the "different." It is another task, and a much more difficult and time-consuming one, to analyze the original articles and to reject those which are entirely impracticable, except to the originator or a limited group of specialists; those which advocate a technic opposed to sound medical principles; and those which, for some other reason, are of little or no value to the general practitioner.

For example: The recent literature contained an article on the use of intravenous anesthesia (Evipal) in tonsillectomies. Evipal is a wonderful anesthetic for short surgical procedures, but when it is used there is a marked relaxation of tongue and pharyngeal muscles, which easily leads to asphyxia,

especially when combined with the respiratory depressant action of the drug, so that a trained attendant needs constantly to observe the patient, watch the respiration, and keep the airway open. This article was not abstracted, because it was felt that the use of this type of anesthesia was contraindicated in any operation on the throat, an opinion concurred in by Dr. J. S. Lundy, chief of the section on anesthesia of the Mayo Clinic.

This is merely a sample of the way in which the abstracts for this Journal are selected and prepared, so that they may be of the utmost practical value and reliability for our readers.

R. L. GORRELL, M.D.

Clarion, Ia.

Look for THE LEISURE HOUR among the advertising pages at the back.

Edwenil in Myasthenia Gravis*

A PATIENT AND FRIEND of mine—a physician—had suffered with myasthenia gravis for some time, and had taken a total of *fourteen pounds* of glycozell, with no appreciable improvement.

Having seen reports from several research groups, to the effect that, at least in some cases of this disease, the primary cause might well be an infection; and having had excellent results in the treatment of endotoxic infections with Edwenil, I decided to try this remedy in this case.

For more than a year, this patient has received an injection of 2 cc. of Edwenil daily, with a few exceptions. The difficulty in clearing the nose and throat of secretions, and the epiphora, have ceased (except when the dose of Edwenil is omitted for a day or two, when they return to some extent), and he is able to be up for hours at a time—even to make short calls upon his neighbors—and has gained forty pounds in weight. These results seem to confirm the infectious cause of myasthenia, at least in this case.

W. H. SMITH, M.D.

Benton, Ill.

[This report is decidedly remarkable, but as a report of actual, personal experience, made in good faith, it cannot be laughed out of court. If these results can be duplicated by others, this may prove to be a highly important discovery.

If any of our readers have tried or do try this method, we shall be glad to receive and publish their reports.—ED.]

*Ill. M. J., Dec., 1937, p. 484.

False Proverbs about Tuberculosis*

"THE blood comes from the back of the throat." I could not say how many times patients have mentioned to me that they have been told this, after an attack of hemoptysis. As an early symptom of tuberculosis, this is a most valuable warning sign. It should bring to light the nature of the trouble from which the patient is suffering. By far the most common cause of blood spitting is pulmonary tuberculosis, and however slight it may be, this disease should always be considered the cause—unless it can be proved to be something else.

"You should be cured in the place where you will have to live." It is very hard to understand a sensible person making such a statement. Surely the patient should be placed in those circumstances where healing can best take place. By healing is meant the formation of fibrous tissue, and the shutting off of the diseased areas of the lung, by the contraction and cicatrization thus obtained. It is difficult to understand why a lung, cicatrized in one part of the world, should be likely to break down when the patient returns to another. Frequently, patients who come to Switzerland make very rapid apparent recovery. The cough and sputum disappear, the weight goes up, and the tired, languid feelings are replaced by those of well-being and fitness. It is difficult for such people to realize that their cure is not completed, and they often return to England after a few months, to begin work, only to break down again, as they are not yet sufficiently stable in health for normal life. A year or two, instead of a month or two, might have made permanent cures for them.

"You can be cured just as well on a balcony at home as in the mountains." The futility of this remark is very obvious when one considers that it is made to people living in large industrial towns, as well as in country places. The smoke-laden air of towns, with its dust and micro-organisms, can hardly be compared with the pure, thin, invigorating air of the mountains, yet I have heard this statement from many patients to whom it has been told, even so recently as this year.

"You are not ill enough to go to the mountains." It is in the early case, where the lesion is still small and localized, and the patient's health and resistance are good, that the most energetic measures should be taken. The patient should be clearly informed regarding his disease, and told that his best chance of getting completely cured

is to spend a long time, if it can possibly be managed, over his treatment. Being told that he is not ill enough to do this only serves to give him a false sense of security, and may lead to much disappointment and ultimate loss of the chance of real recovery.

"You must not go to a high altitude if you are spitting blood." There is some foundation for the popular idea that a mountain climate is not suitable for cases in which hemorrhage occurs. It is undoubtedly true that patients such as elderly people with high blood pressure, who have chronic fibrotic cases with cavitation, will probably not do well if they are inclined to hemorrhage. For the early, active stages, however, the mountain climate is not contraindicated at all. In such types, blood spitting is simply an indication of activity of the disease, and when this is arrested, the hemoptysis stops.

"You must not go to a high altitude if you have a weak heart." This saying, as in the case of the patient who is spitting blood, has some truth in it. I have met patients who have been told that they should not go above, say, two or three thousand feet, but who, in spite of this, have done so in fear and trembling, and have been amazed to find that they have become stronger, and better in every way, in a short time. If, however, there is organic heart trouble, especially if poorly compensated, an altitude of over five thousand feet should not be attempted. In those types of cardiac weakness due to general debility, convalescence from disease, and flabbiness of the heart muscle—all parts of the patient's feeble general condition—there is no contraindication to the mountains, and such cases usually do very well.

"You ought to sit about in the sun." Persons afflicted with pulmonary tuberculosis are, even now, sometimes told to go to some sunny part of the world, and to sit about, or lie about in the sun, and that they will "soon be all right again." It cannot be too strongly emphasized that the indiscriminate and uncontrolled use of sunbathing in pulmonary tuberculosis is very dangerous, and should as a rule be prohibited. If applied in the wrong manner and to the wrong type of case, sun-bathing may easily set up flaming activity in a lung where the disease was perhaps latent or only smouldering, and would have settled down under ordinary treatment. Whilst very beneficial in cases of surgical tuberculosis, it is only in special cases of pulmonary tuberculosis that sun treatment should be advised, and even then it should be carefully watched and controlled.

Many of the above statements which one hears so often, are misleading, and in some cases really dangerous. Some of them lull

*Brit. J. Tuberc., Oct., 1937.

the patient into a sense of false security, whilst others definitely deter him from taking those measures which he himself feels would be best. In any case they are mostly sayings which should be exploded.

BERNARD HUDSON, M.D., M.R.C.P.

Prostatectomy

ONE PATIENT IN FIVE with an obstructive prostatic enlargement presents a carcinomatous change in the prostatic tissue (usually small, relatively benign, and slow-growing). Perineal prostatectomy permits full visualization of the prostate and its adequate removal, as opposed to the mere palliation by transurethral resection and partial removal.

Transurethral resection often results in secondary infection. "Long-continued and often permanent infection of the urine is the worst feature. These patients may have frequency and urgency of urination worse than before operation. Some of these patients pay dearly for their shortened period of hospitalization."

The mortality of transurethral resection varies from 2 to 13 percent; of suprapubic enucleation, from 5 to 20 percent; and of perineal enucleation, from 1 to 2 percent. The last four residents at Johns Hopkins Hospital have performed 190 consecutive perineal prostatectomies with only three deaths (1.6 percent).—HUGH H. YOUNG, M.D., in *South M. J.*, Dec., 1937.

Helps in Home Obstetrics*

I HAVE made it a rule, two to four weeks before the time of delivery, to give to obstetric patients a list of articles which it is desired to have brought to the office for sterilization. These are properly prepared by the nurse, in suitable packages of sheets, towels, et cetera; the sterilization is carried out by the hospital; and the packages are returned to the patient, with careful instructions not to disturb the wrappings.

It is possible to work out a practical and satisfactory aseptic technic for delivery in the most meagerly furnished of homes. It does necessitate the carrying of two bags and supplies of sterile gowns, caps, leg-gings, rubber sheet, instruments, sutures, and anesthetic material.

An enema is given, if the head is not engaged in the pelvis, and the nurse then carefully shaves and washes the perineum and labia, with soap and water. Lysol (compound cresol) solution is sponged over the lower abdomen, perineum, and inside

of the thighs, and followed by painting with 4-per cent Mercurochrome. One ounce of Mercurochrome is injected into the vagina, and repeated at intervals of from two to four hours. Over a period of years, I have done forcep deliveries, performed versions and, at times, made extensive repairs, with satisfactory results.

After the preliminary examination has determined the condition of both mother and child to be good, it is my rule to let them alone, after forbidding "bearing down" until late in the second stage.

All normal deliveries, in both home and hospital, are carried out with the patient on her back, the legs extended upon the bed and separated to a moderate degree. In this position there is quite an appreciable relaxation of the tissues of the perineum and vaginal outlet, and thus less tearing.

JAMES R. BLOSS, M.D.

Huntington, W. Va.

Treatment of Pernicious Malaria

QUININE IS THE DRUG OF CHOICE in treatment of pernicious malaria. Preferably, it should be given intramuscularly, diluted in physiologic saline solution to make a 5-percent solution of the quinine dihydrochloride, as vomiting frequently will not permit its administration by mouth and the intravenous route is dangerous.

The initial dose depends on the age of the patient, but children tolerate and require larger doses: Infants under one year of age were given from 3 to 5 grains (0.2 to 0.325 Gm.); older children from 5 to 15 grains (0.325 to 1.0 Gm.), intramuscularly, repeated every 12 to 18 hours until quinine could be tolerated by mouth, in doses of from 2 to 5 grains three or four times daily for a week after the temperature was normal. There is no relationship between the number of malarial parasites in the peripheral circulation and the eventual outcome.

—JULIAN PRICE, M.D., in *South. M. J.*, Oct., 1937.

Delayed Operation for Acute Osteomyelitis

THE HIGHEST MORTALITY following operations for acute hematogenous osteomyelitis occurred when the operation was done between the second and seventh day of the disease. Surgical intervention is best carried out within the first forty-eight hours of the disease, or reserved until after the first week. Operation should never be performed on a severely ill, toxic, dehydrated

**South. M. J.*, Jan., 1938.

patient until intravenous saline and dextrose solutions, rest, and food (where possible) have put him in the best condition. Frequent, small (200 cc.) transfusions, repeated every second or third day, are often of value.—HOWARD R. MAHORNER, M.D., in *New Orleans M. & S. J.*, Sept., 1937.

Preventing Pneumonia by Quarantine*

FROM THE PUBLIC HEALTH point of view, pneumonia is an infectious disease, regardless of whether it is caused by the pneumococcus, streptococcus, or other pathogenic organism, for in all cases the organisms are continually thrown out by the patient, chiefly by coughing, sneezing, and expectoration.

One objection to the reporting of pneumonias has been the insistence on the reporting of the anatomic type (bronchopneumonia or lobar), which clinical fact often cannot be determined for some time.

In Pittsburgh, the quarantine of pneumonias has been worked out satisfactorily. It is *incomplete*; that is, there is placarding and prohibition of all visitors, but no restriction on other members of the household. This plan has been enthusiastically supported by the public, physicians, and hospitals, and has yielded a *substantial reduction in the pneumonia death rate*. Neufeld's rapid typing of the pneumococci and the administration of serum for Types I and II pneumococcus pneumonia are of great value.

JOHN H. MEHLING, M.D.

Brooklyn, N. Y.

Functional Sterility

SPERMATOZOA will not penetrate an infected cervical mucus plug. Normal cervical secretion attracts the spermatozoa. If the vaginal secretions are not acid, the spermatozoa do not progress normally. Therefore, *do not give alkaline douches for sterility*.

A simple test may be carried out to determine whether or not penetration of the cervical mucus takes place:

1.—On the center of a clean, dry glass slide, place a small drop of semen containing many motile spermatozoa.

2.—Remove a small amount of cervical mucus from the cervical canal, and place it on the slide about 3 mm. from the drop of semen. This is best carried out by wiping the cervix clean, thereby removing the

mucus that may have been in contact with the acid vagina for a time. The cervix is then gently squeezed with a sponge forceps, and the drop of mucus thus expressed is used for the test.

3.—The space between the two drops must be completely dry and not contaminated by semen or mucus; drop a cover glass squarely on the drops. If this does not bring the drops in contact, use *gentle* pressure on the slide, or repeat the test.

4.—Examine the contact zone microscopically with the low-power objective; then with the high-power dry lens.

When the test is positive—that is when the sperms penetrate the mucous plug—their heads are directed toward the mucus as if pulled into it, and they begin to penetrate. When the test is negative, the sperms swim past the mucus without making the slightest effort to enter it, especially when the mucus is infected.—RAPHAEL KURZROK, M.D., Ph.D., in "The Endocrines in Obstetrics and Gynecology." (Williams and Wilkins Co.)

Ovarian Extract in Pruritus Vulvae

PRURITUS VULVAE must not be put in the same class with pruritus ani, as the latter is definitely of local infectious origin, as can be proved by the fact that a simple treatment of washing the anus and rectum with soap and water and applying a 30-percent calomel ointment will often clear up the pruritus ani permanently.

The treatment is simple. It consists of giving the patient extract of whole ovary, 5 grains three times daily, one hour before meals, the first day; two doses the second day; and one dose the third day, continuing in the same sequence for many weeks.—LEO N. ELSON, M.D., in *Urol. & Cut. Rev.*, Oct., 1937.

Gastro-intestinal Symptoms from Cardiovascular Disease*

THE abdomen is the spokesman of the body. It merely tells of trouble; it remains for the physician to locate the cause, bearing in mind the fact that the responsible organ may be located anywhere in the body.

1.—Gallbladder symptoms may be mimicked perfectly by early coronary disease. Coronary thrombosis may be mistaken for biliary colic, unless it is noted that the heart

*N. Y. S. J. M., Nov. 1, 1937.

*Am. J. Dig. Dis. & Nutr., Aug., 1937.

sounds are distant; that there is no radiation of the pain to the back; and that there is moderate to marked dyspnea and shock with hypotension.

2.—“Symptoms of acute surgical abdomen” (severe upper abdominal pain, nausea, vomiting) may be the result of sudden congestive heart failure and consequent liver enlargement.

3.—Sudden, severe pain in the left upper abdominal quadrant, or in either kidney followed by hematuria, should make one suspect embolism of the spleen or kidney from endocarditis. Subacute bacterial endocarditis emboli are infected, so that abscess of the spleen, with rupture and peritonitis, often follow.

4.—Sudden abdominal pain, paroxysmal in appearance, lasting from a few minutes to several hours, associated with general weakness, loss of weight, distention, flatulence, and secondary anemia, may result from abdominal arteriosclerosis (abdominal angina).

HARRY GAUSS, M.D.

Denver, Colo.

Relief of Pain by the General Practitioner*

THE LOCAL ANESTHETICS, procaine and Metycaine, may be used in carrying out most surgical procedures not major in type. The injection of 10 to 20 cc. of a 2-percent solution into the hematoma formed between the ends of a recent fracture, provides almost perfect relief of pain, and also relaxation, which last up to an hour.

For obstetric, insane, or surgical cases, rectal anesthesia may be easily induced by introducing capsules of Nembutal into the rectum, just as one would administer a suppository. A severely burned or injured patient may thus be anesthetized for transportation. *Convulsions* (strychnine, anesthetic, tetanus, eclampsia) may be controlled by the intravenous or rectal administration of barbiturates (Nembutal or Sodium Amytal).—JOHN S. LUNDY, M.D., and E. B. TUOHY, M.D., Rochester, Minn.

Major Amputations

THE MORTALITY AMONG OLDER PERSONS requiring amputations will be appreciably lessened if these points are remembered:

1.—Bear in mind, early in the case, what amputation may become indicated, and prepare the way by having the patient in the best possible condition and by obtaining proper authorization, so that there will be

no delay at the crucial time, when delay adds to the risk.

2.—A major amputation is indicated if there is present: gangrene spreading beyond the toes; gangrene with spreading infection; gangrene accompanied by intractable pain.

3.—Make a *speedy operation*, requiring not over 20 minutes, preferably by the guillotine flap method, with through-and-through sutures.—R. T. FINDLAY, M.D., in *Am. J. S.*, Jan., 1938.

Diagnosis and Treatment of Acute Sinusitis

ACUTE SINUS INFECTIONS are usually self-limited, and nine out of ten cases can be handled by the general practitioner. It is worthy of emphasis that *every coryza or “cold” is attended by sinusitis*. To the laity, the presence of sinusitis necessitates pain as its cardinal symptom. As a matter of fact, hundreds of cases of acute sinus infection occur, and are spontaneously cured, with neither the patient nor physician aware of their occurrence. Those patients suffering pain do so because, anatomically, there is poor drainage from the sinus. In the absence of a foreign body, nasal syphilis, retropharyngeal abscess, and diphtheria, a *purulent nasal discharge in the nose or upper pharynx is diagnostic of sinusitis*.

Treatment: In the early stages, a hot foot bath, with a laxative and Dover's powder, may abort the attack. Small doses of atropine or belladonna may be used until the discharge becomes purulent. A nasal spray of ephedrine (3-percent aqueous solution), adrenalin chloride 1:6,000, or one of these plus antipyrine, one-half percent, or a Benzedrine inhaler, should be used often enough to keep the nose open. In infants, the pus should be removed by a tiny rubber tube attached to a suction pump. In adults, suction may be used after spraying the nose.—KARL HOUSER, M.D., in *Med. World*, Oct., 1937.

True Pain and Psychic Pain

TO EVALUATE PSYCHIC PAIN, one must first speculate on what pain means to the individual. To some Spartan individuals, there is no pain except great pain. To the hyper-sensitive neurotic, even moderate discomfort is “terrific,” “terrible,” or “agonizing.” *The language of true pain is very meager*, as most of us have difficulty in describing sensations, and may be able to offer only such comparisons as, “like a tooth-ache.”

A few months after an attack of ureteral colic, I was able, in a lecture to undergradu-

**Jour-Lan.*, Oct., 1937.

ates, to give what I thought was a good description of that pain, but the following year I found I was unable to repeat that lecture, nor have I ever been able to do so since. However, I am confident that I should recognize the type of pain if it ever recurs.—LOUIS CASAMAJOR, M.D., in *N. Y. S. J. M.*, Dec. 1, 1937.

Acute Cholecystitis a Surgical Disease

THE MORTALITY OF ACUTE CHOLECYSTITIS treated medically is 15 percent; treated surgically, 3.2 percent. From these observations, it would appear that the dangers of operation in the acute stage of cholecystitis have been overemphasized and that operation before gangrene and perforation have occurred is helpful in reducing the mortality.

The incidence of pancreatitis is much greater than is commonly recognized, as a complication of acute cholecystitis. This condition should be suspected when severe pain extends transversely across the upper abdomen to both sides and through to the back, with fever and some jaundice. At operation, there is edema of the pelvic portion of the gallbladder, swollen head of the pancreas, and localized areas of fat necrosis.—THEW WRIGHT, M.D., in *Med. Rec.*, Sept. 15, 1937.

Treatment of Pruritus Ani

IN TREATING PRURITUS ANI, wheals are made with 1-percent Novocain (procaine) solution, at four points; anterior, posterior, and two lateral. Through these wheals are thrust 20-gage, 2-inch needles, affixed to a Luer-Lok syringe containing from 3 to 5 cc. of warmed Eucupin-in-oil (Rare Chemicals, Inc.). Injection is made well beneath the skin in a fanwise manner, and it is advisable to distribute the anesthetic slowly and evenly as the needle is being withdrawn from the position of deep penetration. From 3 to 5 cc. are injected into each quadrant, and then the parts are massaged thoroughly, by means of a finger in the rectum, to prevent pooling and to ensure an even distribution. *This will give anesthesia for from 2 to 5 weeks, and consequent relief of pruritus.*

The pruritic skin, if thickened, can be safely denuded by the use of applications of a 3-percent silver nitrate solution in spirits of nitrous ether, used daily for five consecutive days.—S. D. MANHEIM, M.D., and M. M. MARKS, M.D., in *Am. J. S.*, Jan., 1938.

Selenium Oxychloride

SELENIUM OXYCHLORIDE (Se O Cl_2), which is coming into technical use in industry, as a solvent, is highly toxic and one of the most powerful vesicants and escharotics known. All physicians doing industrial work should be familiar with its properties.

When 0.01 cc. of this salt is applied to the skin of a rabbit, death occurs in less than 24 hours, partly due to the selenium absorbed by the skin, as shown by the presence of this element in the blood and liver.

When less than 0.005 cc. of this salt is applied to the human skin, it produces, within five minutes, a third-degree burn, which is painful and slow to heal; but immediate and abundant flushing with water will hydrolyze the salt so that no burn results. The primary treatment of these burns should include applications of weak alkalies, such as sodium bicarbonate and dilute ammonia water.—H. C. DUDLEY, Biochemist, U.S.P.H.S., in *Pub. Health Reports*, Jan. 21, 1938.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Ten Golden Rules of the Cancer Examination

- 1.—Examine the lips, tongue, cheeks, tonsils, and pharynx for persistent ulcerations, the larynx for hoarseness, and the lungs for persistent cough.
- 2.—Examine the skin of the face, body, and extremities for scaly, bleeding warts, black moles, and unhealed scars.
- 3.—Examine every woman's breast for lumps or bleeding nipples.
- 4.—Examine the subcutaneous tissues for lumps on the arms, legs, or body.
- 5.—Investigate any symptoms of persistent indigestion or difficulty in swallowing. Palpate the abdomen.
- 6.—Examine the lymphnode system for enlargement of the nodes of the neck, axilla, or groin.
- 7.—Examine the uterus for enlargement, lacerations, bleeding, or new growth. Make a bimanual examination to determine the condition of the ovaries.
- 8.—Examine the rectum, and determine the cause of any bleeding or pain.
- 9.—Examine the urine microscopically for blood.
- 10.—Examine the bones, and roentgenograph any bone which is the seat of a boring pain, worse at night.—FRANK E. ADAIR, M.D., in *South. M. & S.*, Aug., 1937.

* Thumbnail Therapeutics *

Barbital Poisoning

IF AN OVERDOSE of barbital or its derivatives is taken, gastric lavage, preferably with warm potassium permanganate solution (1:1000), should be carried out. Alkalies should *not* be used, as they promote solution and absorption. Apply external heat; give 5-percent dextrose solution hypodermically or intravenously; Coramine, 2 to 5 cc., intravenously.—P. J. HANZLIK, M.D., in *Calif. & West. Med.*, May, 1937.

Auto Accident Wounds

REMOVE ALL DARK, graphite-like material from wounds, or it will work up under the scar about the time the patient is debating whether to make the last payment on your bill.—H. L. UPDEGRAFF, M.D., in *A. J. Surg.*, April, 1937.

Treatment of Carbuncles

A FLUCTUANT CARBUNCLE should be incised crucially, with the incisions going from healthy tissue to healthy tissue. The flaps should be cut free to insure adequate drainage, and packed up with gauze. Nembutal or Sodium Amytal, 3 grains (200 mg.), should be given two hours before changing the dressings.—R. L. GORRELL, M.D., in *Nebraska S. M. J.*, May, 1937.

Rectal Pain and Itching

PAIN, INCREASED BY defecation, exercise, and standing, and anal itching, are the presenting symptoms of anal cryptitis (inflammation of one of the small pockets or crypts just inside the anus). Novocain (procaine), ½-percent solution, is infiltrated into the skin and subcutaneous tissues one-fourth inch from the inflamed area. A flexible probe, bent into the form of a hook, is inserted into the opening of the crypt, and tension applied. Curved scissors then excise the mucosa overlying the crypt, thus exposing the pocket, and permitting free drainage.—E. RAPOPORT, M.D., in *A. J. Surg.*, Apr., 1937.

Aluminum Hydroxide in Treatment of Peptic Ulcer

ALUMINUM is not absorbed from the intestinal tract to any significant extent. Aluminum hydroxide, taken by mouth, has no effect on the acid-base equilibrium of blood. The dose varies from 4 cc. (one dram) three times a day to 8 cc. (two drams) four times a day, taken after meals and at bedtime. The usual soft diet was prescribed. Relief of pain occurred in acute and chronic ulcers.—C. R. JONES, M.D., in *A. J. Digest. Dis. & Nutrit.*, April, 1937.

Keeping Babies Healthy with Iron

BABIES THAT ARE being fed cows' milk lose an average of 0.05 mg. of iron daily. Egg yolk and spinach do not increase the iron retention. Five (5) cc. of a 1-percent solution of ferric ammonium citrate daily, or feedings of an iron-rich cereal (Pablum), definitely increase the amount of iron retention, and may be given as early as the age of 2 months.—G. STEARNS, M.D., in *J. Nutrition*, Feb., 1937.

Agranulocytic Angina

DAILY INTRAMUSCULAR INJECTIONS of concentrated liver extract (2 cc.) apparently stimulate leukocytosis in agranulocytic angina. Blood transfusions afford supportive treatment.—NATHAN ROSENTHAL, M.D., in *A. J. Clin. Path.*, May, 1936.

When Cesarean Section Should Not Be Used

THE MATERNAL MORTALITY following cesarean section in eclampsia is very high—from 20 to 50 percent. The classical ("easy") type of cesarean operation should never be done if there is the slightest suspicion of infection. The low or cervical type is not really difficult to perform and is followed by far less mortality and morbidity.—A. G. SCHULTZ, M.D., in *Minn. Med.*, May, 1937.

Facial Wounds

1.—NEVER USE LARGE SKIN CLIPS, coarse catgut, or silkworm gut sutures in treating facial wounds, as they leave very definite scars.

2.—Always clean the wound carefully with soap and water, and trim jagged edges.

3.—Do not use interrupted sutures. A subcuticular, continuous suture of fine silk will leave a fine scar. It should be placed $\frac{1}{8}$ inch below the skin surface, and brought to the surface every $\frac{1}{2}$ inch, so that it can be easily cut and removed on the 4th to 7th day.

4.—If tension is permitted on the skin suture, a wide scar will result. Place a few interrupted dermal or fine silk sutures in the subcutaneous tissue, and leave them buried.—CLAIRE STRAITH, M.D., in *Am. J. Surg.*, April, 1937.

Treatment of Circulatory Collapse

THE FAILURE OF CIRCULATION occurring in pneumonia and other infectious diseases, abdominal perforation, anaphylactic shock, and related conditions, is due to widespread venous dilatation and subsequent insufficient volume of blood reaching the heart. Placing the patient in the horizontal position, or if necessary in the Trendelenburg position (head and chest below the level of the hips and legs), will increase the blood flow to the heart and result in strengthening the weak, fast pulse and raising the blood pressure.—S. WEISS, M.D., and R. W. WILKINS, M.D., in *J. Clin. Investig.*, Jan., 1937.

Treatment of Enuresis in Children

THE CHILD IS ALLOWED to take all food and as much liquid as desired until after the noon meal; fluids are then cut down until four o'clock, when he has his last drink until the following morning. At 5:30 P.M. he has a supper containing as little water as possible (meat, fish, egg, bread, butter, cheese, and crackers). When the child is in bed for the night, he is given a meat or sardine sandwich containing five grams of salt. After two months of this regime, vegetables and fruit may be gradually allowed.—J. ROSENSON, M.D., in *Jour. Pediat.*, Dec., 1936.

Treatment of Leukorrhea

DO NOT USE ALKALINE DOUCHES (sodium bicarbonate, perborate, or chloride, or magnesium sulphate), as they favor the growth of pathogenic organisms.

Prescribe one of these: (1) Lactic acid, U.S.P., one teaspoonful to two quarts of water; (2) vinegar, three tablespoonfuls in two quarts of warm tap water; (3) alum, one tablespoonful in one quart of water. These doses may be decreased, if burning results, and menthol added for its soothing effect.—KARL KARNAKY, M.D., in *South. M. J.*, Nov., 1936.

Simple Reduction of Colles' Fracture

TEN MINUTES continuous traction on the thumb and index finger will reduce most Colles' fractures. The elbow is fixed in a belt to a hook in the wall (or around a pipe or post), so that continuous countertraction can be obtained. If the traction does not reduce the fracture, slight manipulation (pressing the distal fragment toward the palm and the proximal portion of the radius away from the palm) while under this traction will do so.—C. B. MABRY, M.D., in *A. J. Surg.*, Apr., 1937.

Dangers in the Use of Nitrites

THESE SYMPTOMS followed the administration of 2 or 3 grains of sodium nitrite to patients in the upright position: Fast, thready pulse; drop in systolic blood pressure; syncope. If placed in the horizontal position, the circulatory collapse was soon relieved without other treatment. These experiments should be kept in mind when hypertensive patients are taking "blood pressure tablets" (which often contain 1 or more grains of nitrite) or amyl nitrite by inhalation for angina pectoris.—SOMA WEISS, M.D., in *J. Clin. Investig.*, Jan., 1937.

Finger Burns

NEVER APPLY TANNIC ACID completely around a burned finger, as the coagulum will contract, thus interfering with the blood supply. Gangrene has resulted from this ischemia.—G. LOCK, M.D., in "Synopsis of Treatment" (F. A. Davis Co.).



THE DOCTOR'S STUDY

A well-selected book may be a tool by which a man can improve his skill as a worker.—LITTLE JOURNAL FOR PEDIATRISTS.

Buie: Practical Proctology

PRACTICAL PROCTOLOGY. By Louis A. Buie, A.B., M.D., F.A.C.S., Head of Section on Proctology, The Mayo Clinic; Professor of Proctology, The Mayo Foundation, Graduate School, University of Minnesota. 512 Pages with 152 Illustrations. Philadelphia: W. B. Saunders Co. 1937. Cloth, Price, \$6.50.

Saunders have here produced another of their beautiful monographs, and profusely illustrated it with the life-like illustrations of R. Drake of the Mayo Clinic.

Dr. Buie has covered the field of proctology in a very complete manner, including the attitude of patient and physician; indications and technic of examination; anatomy; preoperative and postoperative care with various types of anesthesia; local pathologic conditions (cryptitis, papillitis, fissure, fistula, hemorrhoids, rectal prolapse); anal pruritus; diseases of the anus, rectum and colon (tuberculosis, chronic ulcerative colitis, the dysenteries, diverticula and polyps, malignancy, syphilis, chancreoid, gonorrhea); rectal stricture; etc.

To one who has read Dr. Buie's previous works, much of the material is familiar. The section on anal pruritus gives only the severe alcohol injection treatment, which results in sloughs and involves hospitalization and subsequent treatment for two months. No mention is made of the new oil-soluble anesthetics, which stop the pruritus for weeks, and may result in permanent cure; these may be administered in the office. Very little help is given the physician who does not have the assistance of an expert roentgenologist, as the general subject is dismissed in one-half page. To the novice at proctoscopy, the failure to provide any illustrations of the proctoscopic appearance of various diseases will be distinctly vexing.

New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

The various operative procedures are given in full detail, and made clear by step-by-step illustrations. Dr. Buie's long experience lends importance to his statements as to the relative importance of diagnostic points and treatment measures. The post-operative care he recommends gives great relief to rectal cases, and tends to prevent secondary infection (hot, wet applications; witchhazel compresses, et cetera).

Rose and Carless: Manual of Surgery

ROSE AND CARLESS MANUAL OF SURGERY. By Cecil P. G. Wakeley, D.Sc., F.R.C.S. (Eng.), F.R.S. (Edin.); Senior Surgeon, King's College Hospital; Director of Surgical Studies and Lecturer in Surgery, King's College Hospital Medical School; Hunterian Professor, Royal College of Surgeons of England, etc.; and John B. Hunter, M.C., M. Chir. Cantab., F.R.C.S. (Eng.); Surgeon, King's College Hospital; Lecturer in Surgery, King's College Hospital Medical School; Surgeon, Royal Chest Hospital; Examiner in Surgery to the University of Cambridge. American (Fifteenth) Edition Edited By William T. Coughlin, M.D., B.S., F.A.C.S.; Professor of Surgery and Director of the Department of Surgery, St. Louis University School of Medicine; Surgeon-in-Chief, St. Mary's Group of Hospitals, St. Louis, Mo. 1500 Pages. 953 Illustrations. Baltimore: William Wood and Company. 1937. Price, \$9.00.

This famous surgical text, soon to enter its fortieth year and already in its fifteenth edition, has been revised and enlarged again. Several hundred new illustrations and 150 pages of text have been added.

Of its type, this huge volume is one of the best. There is at present, however, a definite tendency to separate the basic surgical knowledge needed by undergraduate students, and the advanced anatomic study and surgical technic, into separate works, so that the novice will not be hindered nor distracted by surgical procedures, and the graduate by elementary discussions.

Revision of such an extensive treatise must needs leave many untouched pages. It would seem fitting to have included Morton's work (1935) on "The Human Foot," which disproves the existence of any such entity as a transverse metatarsal arch and establishes the importance of weight bearing on the head of each metatarsal, primarily the first. Local anesthesia has made such strides that its dismissal with one and a half pages presents a very different aspect than is represented by the thousands of operations, some of which would be otherwise impossible or impractical, carried out under its analgesia now.

The elements of surgery are presented exceptionally well, and practical applications are stressed, as on the treatment of varicose ulcers under the general discussion of ulceration. Infection, Immunity and Susceptibility, Inflammation and Repair, The Blood in Health and Disease, Pyogenic Infections and Infected Wounds, Ulceration, Necrosis and Gangrene, Specific Infective Diseases, and Tumors and Cysts, are the chapter headings; all are contributed by W. E. Carnegie Dickson, M.D., B.Sc., F.R.C.P.E.

Wounds, surgical shock, technic of operative surgery, use of physical agencies in surgery, hemorrhage, injuries and diseases of arteries, affections of veins, diseases of lymphatics, affections of nerves, surgery of the sympathetic nervous system, surgical diseases of the skin, muscles, tendons, bursae, fractures, dislocations and diseases of bone, spine, scalp, brain, and jaws, are presented in successive chapters. V. E. Negus, M.S., F.R.C.S., edits the chapters on affections of the nose, tonsils, and pharynx, and surgery of the air passages. Surgery of the head, neck, chest, breast, abdomen, kidney and bladder, and rectum are then considered. Hundreds of clear sketches and photographs illustrate typical cases or diagram technic. C. F. Hadefield, M.B.E., M.D., M.A., D.A. contributes the chapter on anesthesia.

Dixon: Osteology

DIXON'S MANUAL OF HUMAN OSTEOLOGY. Revised by E. B. Jamieson, M.D., Senior Demonstrator and Lecturer on Anatomy, University of Edinburgh. 2nd Ed. London: Oxford University Press. 1937. Price, \$7.50.

This volume is the expanded equivalent of the section on osteology in a large anatomical text. It has been expanded by the addition of the chief arteries and nerves of the extremities and by the contents of the cavities, so that the book can be used as an intro-

duction to the general study of anatomy. The text is written so that it is easily understandable by the beginner.

The illustrations, some in color, are all clear and sharp, and of the usual type depicting the bone outlines, muscle attachments and insertions, etc. Several roentgenograms are reproduced from Cunningham's "Anatomy."

Brock: Clinical Neurology

THE BASIS OF CLINICAL NEUROLOGY. By Samuel Brock, M.D., Associate Professor of Neurology, College of Medicine, New York University; Senior Attending Neurologist, The Neurological Institute of New York; Associate Neurologist, Bellevue Hospital, New York City. Baltimore: Wm. Wood & Co. 1937. Price, \$4.75.

In neurology, the making of a proper diagnosis is based on a knowledge of neuroanatomy and neurophysiology. To a greater or less extent, this knowledge may extend to all fields of clinical medicine since the rôle played by the nervous system as an integrator and controller of body functions is more and more carrying its implications into all fields of disease.

Dr. Brock describes briefly and clearly the important anatomic facts and the salient physiologic facts and their clinical implications. Such a logical handling of the subject tends to prevent us from mental short-cutting, such as, "Babinski sign positive—cerebral or spinal cord injury." Would that other authors cared to use such an approach to medical and surgical diagnosis!

The volume begins with a brief review of the basic unit of the nervous system, the neurone, and the basic physiologic unit, the reflex arc, and then proceeds to consider the anatomy and rôle of the spinal cord, the brain stem, cerebellum, and higher centers.

May: Diseases of the Eye

MANUAL OF THE DISEASES OF THE EYE (For Students and General Practitioners). By Charles H. May, M.D., Consulting Ophthalmologist to Bellevue, Mt. Sinai, and French Hospitals, New York; Formerly, Chief of Clinic and Instructor in Ophthalmology, Medical Department of Columbia University, and Director of the Eye Service at Bellevue Hospital, New York. With the Assistance of Charles A. Perera, M.D., Instructor in Ophthalmology, College of Physicians and Surgeons, Columbia University, New York. 15th Ed. Revised. 376 Illustrations, Baltimore: Wm. Wood & Co. 1937. Price, \$4.00.

It is very rare to have a medical work go through fifteen editions, to be printed in five languages, and to be the acknowledged standard work in its field. To have all this occur during the medical lifetime of the author is almost unheard of.

It has always been a pleasure to refer to "May's Manual," as the diseases are clearly

outlined, with specific, complete notes on diagnosis and treatment. The arrangement of material is such that related topics are found together, differential diagnosis is rendered easier and quicker, and repetition is avoided.

There are no wasted words. The section on cataract is a classic—in five pages, there is given a complete summary of present knowledge on the anatomy and physiology of the lens, and clinical facts about cataract formation, their types and causes. No mention is made of carotene in the treatment of early cataract.

The specialist, especially if of the younger school, may complain that little attention is paid to the recent work on physiology of the eye, and that too much emphasis is placed on the clinical aspect of ophthalmology. For the general practitioner and student, however, the book is ideal, as a sane, conservative well-illustrated text.

Savill: The Hair and Scalp

THE HAIR AND SCALP. A Clinical Study, with a Chapter on Hirsuties. By Agnes Savill, M.A., M.D. (Glasg.), M.R.C.P.I., Consulting Physician to Fitzroy Square Skin Hospital; Formerly Physician to the St. John's Hospital for Skin Diseases, Leicester Square; to the Skin Department, South London Hospital for Women; and Chief (during the War) of the Electrotherapeutic Department, Scottish Women's Hospital, Royaumont, France. 2nd Edition. Baltimore: Wm. Wood & Co. 1937. Price, \$4.75.

All forms of illness, however slight, should fall within the sphere of the physician. The public, however, have for so long associated the idea of medicine with serious disease that they hesitate to consult a medical practitioner for maladies connected with the scalp and hair. Even in case of obvious disease of the scalp, the advice of the dermatologist is often not requested until the patient has tried several of the preparations described in glowing advertisements, which adorn the popular magazines. This attitude of the layman has much justification; few busy practitioners show much sympathy with the young woman who complains of scanty or lustreless hair.

The author is convinced that the falling of hair is most often due to some defect in the general condition. In Chapter VI, methods of clinical investigation are given for the discovery of the cause of partial baldness (hypothyroidism, hypopituitarism, anemia, leukemia, toxic goiter, general malnutrition, high fevers). Succeeding chapters discuss the diagnosis and treatment of hair-fall due to local causes.

This very complete monograph also takes up the structure and physiology of the hair, including a section on the molecular structure of hair. Grey hair, care of the hair, common disorders of the hair, itching of the scalp, scaly conditions of the scalp, erythematous and pustular conditions, vesicular

and bullous conditions, altered color of the scalp, and superficial tumors of the scalp are taken up in individual chapters.

That distressing problem, pruritus of the scalp, is considered from the symptom standpoint, Dr. Savill considering it to be due to (1) neurodermatitis; (2) urticaria; (3) acne varioliformis; (4) streptococcal pityriasis; (5) pediculosis capitis; or (6) drug habits. Each of these disease processes is then related in detail, so that the diagnosis becomes apparent at once.

This is the day of monographs. Dr. Savill's work is a welcome addition to the ranks.

Northfield: Conquest of Nerves

CONQUEST OF NERVES: The Inspiring Record of a Personal Triumph over Neurasthenia. By Wilfrid Northfield. London: The Fenland Press. 1937. Price, \$2.50.

This little volume might be interesting to the physician as a record of the confused jumble of facts and fancies about physical and mental health that is the net result of years of association with physicians, lay health advisers, and others, by an ex-soldier who succumbed to a severe case of neurasthenia. Some sections might be valuable as suggestions on what to tell the patient. That on the heart is especially recommended.

If some of the superfluous verbiage and numerous references to "purifying the blood" were removed, this book might be just the thing to have a neurasthenic patient read. Possibly the author, guided by a modern medical adviser, might make it better in the second edition.

Holman: Arteriovenous Aneurysm

ARTERIOVENOUS ANEURYSM. By Emile Holman, A.B., B.A., Oxon., M.D.; Professor of Surgery, Stanford University Medical School; Surgeon-in-chief, Lane and Stanford University Hospitals; Successively a member also of the Surgical Staffs of Radcliffe Infirmary, Oxford, England; Children's Hospital, Baltimore; Peter Brent Brigham Hospital, Boston; Lakeside Hospital, Cleveland; and Peiping Union Medical College, Peiping, China. New York: The Macmillan Co. 1937. Price, \$5.00.

This monograph, one of the Macmillan Surgical Monographs, will do much to add lustre to the name of its author. The lesion, although considered rather rare, is a most important one from the patient's standpoint. As Dr. Holman demonstrates, by experimental and clinical study, a connection between artery and vein directly results in a great increase in the load of the heart. Such an aneurysm tends to increase progressively in size, leading to weakness and incapacitation.

Careful study is necessary to accurately locate the extent of the lesion and its possibilities of cure. The text contains many such diagnostic points, and actual case histories illustrate what may be expected, in the way of operative intervention, the surgical technic and end-results.

The practitioner should remember that any injury (knife-wound, bullet, etc.) which is followed by profuse, but rather easily controlled bleeding, may be the starting point of an arteriovenous fistula. A thrill and bruit promptly appear, after a few hours to a few days.

Steen: Pediatrics

INFANTS IN HEALTH AND SICKNESS. By Robert Elsworth Steen, M.D., F.R.C.P.I., Physician, National Children's Hospital, Dublin; Meath Hospital, Dublin; and Sunshine Home, Stillorgan; Medical Director, St. Patrick's Infant Hospital and Nursery Training College, Temple Hill, Blackrock; Consulting Physician, Stewart Institution, Castleknock and Cottage Home, Dun Laoghaire, Ireland. London: Oxford University Press. 1937. Price, \$1.75.

Every now and then the reviewer's life is brightened by an apologetic little book which arrives all unheralded, yet proves to be a mine of information. This volume of 120 pages, handsomely and durably bound and well printed (as are all its fellows in the Oxford Medical Publication series), takes up the normal activities of an infant and its feeding, and then abnormalities, all under outlined headings, so that one can instantly find any topic. For example, an infant is suffering with diarrhea. You turn to page 56, there to find classified diarrhea in breast-fed and artificially fed infants, subclassified as acute diarrhea and chronic diarrhea, and then individualized as primary or secondary (to some infection elsewhere) diarrhea, etc. Thus, in a few minutes, one can refresh one's mind as to its causes, and as to simple, effective treatment.

This little volume was first printed in Tweedy's Practical Obstetrics. It should enjoy a much-deserved circulation.

Grimsdale and Brewerton: Ophthalmic Operations

A TEXTBOOK OF OPHTHALMIC OPERATIONS. By Harold Grimsdale, M.B., F.R.C.S., Consulting Ophthalmic Surgeon to St. George's Hospital; Consulting Surgeon to Royal Westminster Ophthalmic Hospital; and Elmore Brewerton, F.R.C.S., Consulting Surgeon to the Metropolitan Hospital; Consulting Ophthalmic Surgeon to the Royal Westminster Ophthalmic Hospital. 3rd Edition. Baltimore: Wm. Wood & Co. 1937. Price, \$6.00.

To those interested in surgery of the eye and its adnexa, this text has been "bible" for many years. In this, the third edition,

much older material has been deleted to make way for the newer procedures, notably the Gonin cautery puncture for retinal detachment. To an American reviewer, it seems that little space has been given for a resume of the successful corneal transplants carried out in this country.

The text is much more than one on operative surgery, although it would be well worth while for that purpose alone. Each condition is discussed succinctly before considering surgical procedures. Then, one or more surgical technics are given in sufficient detail, and illustrated with sufficient graphic drawings, to become quite intelligible to one who has never seen them performed.

One paragraph is especially interesting: "Until a few years ago, it was taught that a foreign body of whatever kind, if left in an eye, would invariably produce sympathetic inflammation sooner or later. It is now known that certain substances (glass, lead) may remain in the eye for years without producing any irritation . . . the danger from a foreign body rises after the second week, to a maximum about the tenth week, and then slowly falls to a practically negligible amount at the end of a year."

Pauchet and Dupret: Atlas of Anatomy

POCKET ATLAS OF ANATOMY. By Victor Pauchet and S. Dupret. 3rd Edition. London: Oxford University Press. 1937. 345 Plates. Price, \$4.00.

This little volume is an old friend of those at the dissecting table. In its hundreds of clear, colored illustrations one finds sketches of every region of the body, including joints, surgical areas, extremities, etc. The plates are so well drawn that salient anatomic points are quickly grasped. For this reason, the book can be used to brush up the memory before some surgical procedure.

Barrington-Ward: Abdominal Surgery of Children

THE ABDOMINAL SURGERY OF CHILDREN. By Sir Lancelot Barrington-Ward, K.C.V.O., Ch.M., F.R.C.S. (Edin.), F.R.C.S. (Eng.), Surgeon to H.M. The King; Senior Surgeon, Hospital for Sick Children, Great Ormond Street; Senior Surgeon, Royal Northern Hospital, London. 2nd ed. London: Oxford University Press. 1937. Price, \$9.00.

This beautifully bound and printed volume is the expression of an experienced older surgeon on the limited field of abdominal surgery in children. Appendicitis is covered in a very complete way, both as to symptomatology and physical findings in the various types (retrocecal, pelvic, lateral, etc.) of the condition, due to varying locations of the appendix.

Hernias, intussusception, intestinal obstruction, and other less common entities are considered. The tone throughout is conservative, well-balanced, sane. If one criticism may be made, it seems a bit contradictory to advise operation for undescended testis and, in the next paragraph, to admit that many come down into proper place without treatment of any kind.

The illustrations are clear and well-selected.

Porges: Stomach Diseases

MAGENKRANKHEITEN: IHRE DIAGNOSE UND THERAPIE. In Zwölf Vorlesungen (Diseases of the Stomach: Their Diagnosis and Therapy. In 12 Lectures). By Prof. Dr. Otto Porges, Director Second Medical Department of Childs Hospital. Pages, 188. Vienna: Urban und Schwarzenberg. 1937. Price, paper Rm. 5.00; bound, Rm. 6.50.

This is the second, revised companion volume to a small manual on intestinal diseases which was favorably reviewed in *CLINICAL MEDICINE AND SURGERY*, Nov., 1935, on page 573. The author has the knack of presenting, in colloquial style, much information in few words. His "lectures" actually are chapters prepared as a review for physicians, with the aim of stimulating critical study. They cover the anatomy and physiology of the stomach, symptomatology, diagnostics, and therapy of its diseases, including those borderline conditions which may require surgical intervention. A brief discussion on dietetics is original in many aspects. The clinical discourse is of such excellent quality that all who make the contents their own will certainly become better diagnosticians and will be enabled to utilize the most effective therapeutic measures.

G. M. B.

Furnas: The Next 100 Years

THE NEXT HUNDRED YEARS. The Unfinished Business of Science. By C. C. Furnas, Associate Professor of Chemical Engineering, Yale University. Baltimore: The Williams & Wilkins Company. 1936. Price, \$5.00.

We think we have made enormous progress in the past century, as indeed we have, but those who think we are near the limit of new discoveries and inventions will promptly see their mistake when they have read a few pages of this highly interesting book.

The author takes up various sciences—biology, chemistry, physics, etc.—and under each one sets forth, in crisp, pithy, stimulating sentences, the jobs which that science has yet to do before it can become self-satisfied about having performed its reasonable functions in the general scheme of things.

The "common cold" still causes immense losses of human vitality and of cash, and its

cause and cure are still unknown; nor does anyone know exactly what causes senility and death.

Controversies over the production and distribution of power are a feature of our time; yet if we could capture all the energy of all the sunlight that falls on the earth's surface in one minute, it would supply the world's power demands for an entire year.

The best incandescent lamp converts only 2 percent of the energy it receives into visible rays; so the rear end of a lightning bug is 8,000 times as efficient as the head end of a man in the matter of converting energy into light.

We need safer and faster airplanes; automobiles and clothes that do not wear out; medicines that really cure; schools that educate; and a social and economic system that offers peace, security, and a chance to work for a share of the world's goods. These are just a few items on the list of "The Unfinished Business of Science."

The last section of the book presents the author's ideas regarding the social consequences of the achievement of these worthwhile goals.

Any physician who will read this book, intelligently and with an open mind, will be a better doctor, because he will be a humbler and more clear-thinking man, and, perhaps, one of the leaders who will be required to bring these things to pass.

Kerr: Operative Obstetrics

OPERATIVE OBSTETRICS. A Guide to the Difficulties and Complications of Obstetric Practice. By J. M. Munroe Kerr, LL.D., M.D., F.C.O.G., Honorary Fellow Royal Society of Medicine in Ireland, Edinburgh Obstetrical Society, American Gynecological Society; Emeritus Regius Professor of Midwifery, University of Glasgow; etc., Assisted by Donald McIntyre, M.D., F.C.O.G., Consulting Obstetric Surgeon, Barshaw Maternity Hospital; Lecturer in Gynecology, University of Glasgow; Surgeon, Royal Samaritan Hospital for Women, Glasgow, and D. Fyfe Anderson, M.D., Senior Assistant to Professor of Obstetrics and Gynecology, Glasgow University; Assistant Obstetric Surgeon, Royal Maternity Hospital. Fourth Edition. 388 Illustrations. Baltimore: William Wood and Co. 1937. Price, \$12.00.

In difficult obstetric cases, one would often give much for an experienced, frank consultant. Dr. Kerr has the background necessary for such advice, in his many years of service (forty-four), and anyone who reads his text cannot but be struck by his frankness.

Holmes: Popular Chemistry

OUT OF THE TEST TUBE. By Harry N. Holmes, Ph.D., Oberlin College. New Edition, Revised and Expanded. 101 Illus-

trations. New York: Emerson Books, Inc. 1937. Price, \$3.00.

To those who are not specialists in the field of chemistry, this volume will prove most entertaining and enlightening. The whole field of chemistry has been covered—its past, its present, and an indication of what we may expect in the future. Some of the revelations will prove most startling to those who are not acquainted with the importance that chemistry has in influencing our present environment. It shows how our food, our clothing, even our lives, are developed and improved by this branch of science. Throughout the volume are to be found many excellent illustrations, and many fascinating stories of the lives of some of the better-known men who have helped to develop the science of chemistry.

This is a highly interesting and instructive book for any physician's "spare time" reading, and one which he can confidently recommend to those of his friends who have a thirst for valid information.

J. R. C.

MacKee and Cipollaro: Cutaneous Cancer and Precancer

CUTANEOUS CANCER AND PRECANCER. By George M. MacKee, M.D., Professor of Clinical Dermatology and Syphilology and Director of the Skin and Cancer Unit, New York Postgraduate Medical School and Hospital, Columbia University; and Anthony C. Cipollaro, M.D., Associate in Dermatology, Skin and Cancer Unit, New York Postgraduate Medical School and Hospital, Columbia University. With a Foreword by Francis Carter Wood, M.D., Director of the Institute of Cancer Research, Columbia University. New York: American Journal of Cancer. 1937. Price \$3.75.

This is a *rara avis*, a medical text that is helpful in the everyday care of skin disease, and yet is scientifically authentic in regard to the diagnosis of those troublesome conditions, the precancerous keratoses—"farmers skin," leukoplakia, and other common dermatologic abnormalities which frequently become malignant.

Four sections are given: (1) Morbidity and mortality of cutaneous cancer, including that of the buccal cavity; (2) the precancerous dermatoses; (3) carcinoma and sarcoma; (4) established therapeutic methods, including scalpel surgery, electrosurgery, cautery, electrolysis, carbon dioxide and caustics, roentgen rays, Grenz rays, and radium.

Of recent years, there has been much mention made of carcinoma developing in burned areas. These authors describe such cases, and also those in which malignancy occurred in various types of cicatrices. They consider that the cutaneous horn, erythroplasia, keratoses, kraurosis vulvae, lupus erythematosus, lupus vulgaris, nevi, radio-

dermatitis, sebaceous cysts, certain syphilitic lesions, ulcers, and fistulae are often potentially malignant. Diagnosis, both clinical and microscopic, is considered, as well as treatment.

The plan of the book is simple. Each disease is first described in a few brief paragraphs; the etiology is given in a few sentences; pathology is discussed and illustrated by fine reproductions of histopathology; and treatment is then indicated.

The last section is devoted to the various agencies by which pre-malignant and malignant conditions may be destroyed or removed. The authors do not unreservedly recommend any particular type of treatment. The discussion on the use of carbon dioxide snow indicates that they are familiar with its value.

Price: Practice of Medicine

A TEXTBOOK OF THE PRACTICE OF MEDICINE. By Various Authors. Edited by Frederick W. Price, M.D., C.M., F.R.C.P., F.R.S. (Edin.), Consulting Physician to the Royal Northern Hospital; Senior Physician to the National Hospital for Diseases of the Heart, London; Examiner in Medicine at the University of St. Andrews; Formerly Physician and Pathologist to the Mount Vernon Hospital for Consumption and Diseases of the Chest. 5th ed. London: Oxford University Press. June, 1937. Price, \$12.50.

Twenty-eight distinguished English physicians and surgeons collaborated on this general work, which includes all fields of medicine, diseases of the skin, and psychologic medicine. It is of value to physicians in this country, because it calls to their attention points on diagnosis and treatment which they do not commonly employ: For example, the use of large doses of hexamine in cholecystitis; the estimation of cardiac prognosis by the amount of rest needed to attain optimum health; the emphasis on palpitation as the initial symptom of masked hyperthyroidism; the use of epinephrin with Pituitrin (pituitary extract) in the treatment of acute bronchial asthma; et cetera.

Throughout, the book is stimulating, interesting, and instructive. Not the least interesting and practical is the brief (90 pages) section on Psychologic Medicine, in which the relationship to general medicine is clearly sketched and its importance to the general practitioner emphasized.

Merritt & Fremont-Smith: Cerebrospinal Fluid

THE CEREBROSPINAL FLUID. By H. Houston Merritt, M.D., Assistant Professor Neurology, Harvard Medical School; Director of the Cerebrospinal Fluid Laboratory, Boston City Hospital; and Frank Fremont-Smith, M.D., formerly Assistant Professor of Neuropathology, Harvard Medical

School; formerly Director of the Cerebrospinal Fluid Laboratory. With a Foreword by James B. Ayer, M.D. 333 Pages with 17 Illustrations. Philadelphia: W. B. Saunders Co. 1937. Cloth, Price \$5.00.

This monograph was compiled after studying the results of 21,000 spinal fluid examinations, carried out at the Boston City Hospital, and correlating results with the clinical signs and symptoms. At last, we have a reference book in which positive findings can be definitely integrated with the causative disease.

There is an amazing amount of clinical information contained in these pages, that is of value in many fields of medicine and surgery. For example, decompensated cardiac patients present cerebrospinal fluid pressures ranging between 200 and 500 mm. (normal: 70 to 180 mm.). These observations have been carried out in a large enough series of cases so that the rationale of restricted fluids, restricted salt intake, and dehydration (intravenous injections of dextrose, sucrose, or saline solution) is definitely established.

The anatomy and physiology of the cere-

brospinal fluid and its spaces are first discussed. The chemistry and pathologic physiology; i.e., content of nitrogen, chlorides, sugar, urea, vitamins, drugs, pressure, and cell contents, are demonstrated.

The technic of lumbar puncture and cistern puncture is covered in Chapter IV; Chapter V discusses some 91 disease conditions in which a spinal fluid examination may be indicated, and the exact findings. The therapeutic use of lumbar puncture has an entire chapter devoted to it. The reviewer is glad to see that the authors endorse the use of lumbar puncture in increased intracranial pressure resulting from meningism, acute purulent meningitis, head injuries, and subarachnoid hemorrhage. This may help to counteract the sterile precepts of Dandy.

Roentgenography of the ventricle-subarachnoid space (by T. J. C. von Storch, M.D.) and methods of cerebrospinal fluid examination (by Mary Dailey Irvine, A.B.) complete a well-rounded, factual, necessary work for every practitioner, be he diagnostician or surgeon.

R. L. G.

New Books Received

The following books have been received in this office and will be reviewed in our pages as rapidly as possible.

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY. Edited by Ernst A. Pohle, M.D., Ph.D., F.A.C.R. Foreword by W. Edward Chamberlain, B.S., M.D., F.A.C.R. Philadelphia: Lea & Febiger. 1938. Price, \$4.50.

PRACTICAL BACTERIOLOGY, HAEMATOLOGY AND ANIMAL PARASITOLOGY. By E. R. Sitt, M.D., Sc.D., LL.D., Paul W. Clough, M.D., and Mildred C. Clough, M.D. Philadelphia: P. Blakiston's Son and Company, Inc. 1938. Price, \$7.00.

MALNUTRITION, THE MEDICAL OCUPUS. By John Preston Sutherland, M.D., Sc.D. (Hon.) Boston: Meador Publishing Company. 1937. Price, \$3.00.

STEP BY STEP IN SEX EDUCATION. By Edith Hale Swift, M.D. New York: The Macmillan Company. 1938. Price, \$2.00.

TREATMENT OF SOME CHRONIC AND 'INCURABLE' DISEASES. By A. T. Todd, O.B.E., M.B. (Edin.), M.R.C.P. (Lond.) Baltimore: William Wood & Company. 1937. Price, \$3.00.

CHIROPODY: THEORY AND PRACTICE. By Franklin Charlesworth, F.B.A.Ch. Foreword by W. Sayle Creer, M.Ch. (Orth.), F.R.C.S. 2nd Edition. London, England: The Actinic Press, Ltd. Price, \$3.85, postpaid.

A TEXTBOOK OF HEMATOLOGY. By William Magner, M.D., D.P.H., Philadelphia: P. Blakiston's Son & Company, Inc. 1938. Price, \$4.50.

COLLECTED PAPERS ON TUBERCULOSIS. By Sir Robert W. Philip, M.A., M.D., LL.D., F.R.C.P. Hon., F.R.C.S.E., F.R.S.E. New York: Oxford University Press. 1937. Price, \$7.50.

ASTHMA RESEARCH COUNCIL. Report of Progress for the Year Ended 31st of October, 1937, and Statement of Income and Expenditure for the Year Ended 31st of December, 1936. Copies of the Report can be obtained free from the Asthma Research Council, c/o King's College, Strand, London, W.C.2, England.

ILLNESS. Its Story and Some Common Symptoms. A Guide for the Layman. By S. Henning Belfrage, M.D., Lond. New York: Oxford University Press. 1938. Price, \$1.50.

WORDS TO THE WISE. A Practical Guide to the Occult Sciences. By Manly P. Hall. Los Angeles, California: Philosophical Research Society Press. 1936. Price, \$2.00.

STERNALPUNKTION UND KNOCHENMARKSBILD BEI BLUTKRANKHEITEN. By Priv.-Doz. Dr. Rudolf Klima. Berlin and Wien: Urban & Schwarzenberg. 1938. Price, RM 5.—.

Medical News



Passing of Dr. Jaffé

DR. RICHARD HERMANN JAFFÉ, of Chicago, nationally known pathologist, passed to his rest as a result of a heart attack, December 16, 1937, at the relatively early age of 49 years.

Dr. Jaffé was a native of Austria, and was assistant professor of pathology at the University of Vienna from 1913 to 1922, when he came to Chicago to develop the laboratories of Grant Hospital. His unique genius in his line soon brought him recognition, so that he was on the faculties of both the University of Illinois and University of Chicago Medical Schools, and, in addition to his appointment at Grant Hospital, was also chief pathologist at the Cook County Hospital.

There are few men in a non-clinical medical specialty who would be so deeply and genuinely missed as will this kindly and genial scholar and teacher.

American College of Physicians

THE ANNUAL MEETING of the American College of Physicians will be held at the Waldorf Astoria Hotel, New York City, April 4 to 8, inclusive. Those who have been in the habit of attending these meetings need no urging to be on hand. Fellows and associates who have not been getting the large benefits which are to be obtained by such attendance are advised to begin this year. The practical clinical instruction presented, and association with their confreres, are a big help. Full information may be obtained from E. R. Loveland, 4200 Pine St., Philadelphia, Pa.

Vitamin B₁

AN EXCELLENT MONOGRAPH on vitamin B₁, representing an immense amount of work and containing information not readily available elsewhere, has been compiled and published in an attractive format by Merck & Co.

This publication is available, without charge, to investigators in the field of vitamin therapy, to medical specialists, food

chemists, research workers in nutrition, college libraries, ethical pharmaceutical manufacturers, and others who can make real use of it, but is not for general distribution to clinicians, so those who write for it should show the basis on which they are entitled to it.

Industrial Physicians' Meeting

THE TWENTY-THIRD ANNUAL MEETING of the Association of Industrial Physicians and Surgeons, and the second annual Midwest Conference on Occupational Diseases will be held at the Palmer House, Chicago, June 6 to 9, inclusive, 1938.

This meeting will be of interest to every physician, because industrial medicine is assuming steadily increasing importance, and all medical men should be familiar with at least the rudiments of its objects and methods. There will be a highly instructive program of lectures and discussions, and also technical and scientific exhibits.

Full details may be obtained from Dr. Edward C. Hohnblad, 28 E. Jackson Blvd., Chicago, Ill.

Glass Marking Inks and Fluorescent Chalk

INKS FOR MARKING on glass, porcelain, and metal have been developed by the Westinghouse Electric & Manufacturing Company. Glass marking inks in both black and white, which adhere to a surface when applied with a steel pen, are available. If set by the application of a moderate temperature they cannot be removed completely by ordinary scraping.

A fluorescent chalk, which glows with a strong green light and is visible at a distance, has also been developed by these people. This new material appears and marks like ordinary chalk under normal light. It glows in the dark when irradiated with ultraviolet rays, such as those from a Sun-lamp enclosed in a black globe.

Doctors find this chalk useful for jotting down memorandums on a blackboard during the course of a fluoroscopic examination or a showing of stereoptican or moving pictures.



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